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THE CONSERVATION OF ENERGY AND CONSERVATIVE GYNÆCOLOGY.

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Read before the Boston Gynæcological Society.

There may seem to be some incongruity in the caption of this paper, a juxtaposition of terms that can have no possible relation each to the other; or, it may be, an entire misconception of what is meant by the Conservation of Energy. The argument from general laws of physics to similar laws in the individual, is not an unusual or an improper one. We know a force, not in the concrete, but from outward and tangible evidences. As an abstract term we can conceive it only as an originator of molecular action, which, once instituted, is never lost.

Life itself, its highest equivalent, may be resolved into protoplasmic change or motion, governed by a a limitless force beyond that point of inchoate consciousness at which the finite is always arrested. This force infinite, of which our knowledge of finite force is but the offspring, is intelligent, since it creates intelligence as made manifest in consciousness. This does not assume a creative or potential molecule, but the harmonious blending of molecules into creative intelligence, of which science cannot fathom the mystery, though it may recognize the existence of it as a *force*. Instead, then, of reading the "conservation of energy," it might in a large sense be called the "conservation of life," so that the second clause of the heading would be associated as a cause in the production of that end. While carried to its ultimate issue this might be correct, yet it is better for purposes of discussion to restrict the intention to a manifestation of potency only, so that my desire resolves itself into a study of the relationship between conservative gynæcology and the husbanding of strength. Intelligent conservatism and meddlesome interference is the antithesis that I wish to make very strong.

The expectant plan in gynæcology, as well as in general practice, is sometimes a safe one to follow. Typhoid fever, pneumonia, and some other conditions are oftentimes best treated by being left *untreated*, in so far as medicine assumes prominence. Hygiene, and with it intelligent nursing, are the sheet anchors of the physician. Particularly does such a course seem desirable when pathology is assuming such new forms that logical therapeusis is out of the question. Symptoms are combated without any absolute knowledge of the primary cause of the disorder. Fever, its cause and effect; its relation to the great nervous centers, and the relation of these centres themselves as originators of fever; the inflammatory conditions of fever, and the relationship of the cardiac nerve centres to febrile excitation—all these points are very imperfectly understood. Does nervous derangement depend upon the fever by which it is accompanied, or is the rise in temperature and the abnormal pulse due to a primary lesion of the central nervous organization? Until our knowledge of these things is absolute, the expectant plan is a logical one. The disease may have a tendency to cure itself, and the conservation of energy will depend upon the proper adjustment in equilibrium of other forces, which is best done, and only well done, by furnishing to the system certain equivalents out of which this energy may be evolved. Easily digested food, which shall furnish nourishment and heat, stands first in order.

If all this be true of general medicine, it is doubly so of gynæcology. There are many reasons which conspire to make this otherwise invaluable specialty a matter of ridicule to many of our professional friends. In the first place many men in country practice have delivered between one and two thousand women, some more and some less, without so much as knowing of the antiseptic rules which are now perplexing erudite medical societies, and without ever having to record a case of puerperal fever. I know of two men, one in Maine, and one in New Jersey, with such histories. Again, there are scores of general practitioners who are governed in their special practice by text-books, and they have lived to find that pessaries, as a rule, are humbugs; that intra-uterine injections are often fraught with much danger; that women may have dyspepsia and functional cardiac derangements without uterine trouble; that oöphoritis if treated with patience and persistence may be relieved without recourse to surgery; and that many of the numberless complaints of minor importance, which are the necessary outcome of any departure from a normal condition of a female sexual apparatus, may be overcome by the observance of simple rules without recourse to elaborate interference; and that a woman may be the happy mother of healthy children and enjoy an average share of good health while carrying about with her a cervical laceration. The danger of specialism is the overlooking of intercurrent

disorders which may happen to a woman who is being treated for uterine complaint, or the proneness which we have of relegating them all to the local condition. A greater danger still is exaggeration of treatment. By this I mean a restlessness in watching and waiting, an impatience for immediate results, a too hasty surgical interference, and an excessive medication not demanded by the actual necessities of the case. Reverencing as much as anyone the high calling of my especial field of professional industry, and subscribing most heartily to the teachings of the nestors of gynæcology, I cannot turn a deaf ear to the evidences of experience. Mechanical laws are distorted to meet certain surgical exigencies; instruments are devised and praised, which are contrary to all preconceived ideas of sound mechanics, which do not correspond with thorough anatomical knowledge, and which are thoroughly pernicious in the larger proportion of cases. There is a growing tendency to treat with obstinate pertinacity the uterus, when it would be much better to leave it alone for a more convenient season.

I hold it to be proven also, that a woman's strength is nourished and increased by a less frequent interference than we are apt to observe, and that much more is to be gained by general hygienic detail for a certain length of time, until, with incoming rigor and a measure of that confidence in her physician which is a pre-requisite of success, the woman shall submit to local examination without the risk of nervous excitation. It is a dangerous matter to alarm any woman about her uterus. It brings about a persistent, ever-present introspection, which breeds all kinds of imaginative disorders, and leads on to depression and melancholia. All the exaggerations of nervous manifestation are increased by unnecessary or immediate examinations. In the long list of anomalous nervous symptoms incident to women in run down conditions, with dislocated uteri, there is hardly one which can be traced directly to the local mischief alone. If the physician first address himself to the uterus, he will simply make matters worse; improve general conditions first before attempting any special treatment. Not infrequently, but most frequently, does it happen that the nervous derangement and physical drain have produced the uterine displacement. This very displacement, indeed, may become almost unperceived if the other viscera of the body be brought into harmonious relationship. Because a woman has an aching ovary, an enlarged tube and a pathological menstruation, shall we at once pronounce it a pyo-salpinx, and counsel oöphorectomy or rather Tait's operation? It matters not however successful the result of such operation, there has been taken from the woman an essential, integral part of her distinctive individuality; and, in a certain sense, she becomes really unsexed. This will always be, and must necessarily so be, an ever-present grief. She will never quite reconcile herself to the change. Since the ovary and tube bear certain definite and unalterable relations to the whole cerebro-spinal axis, and are important factors in the forces libreated by their just and harmonious action, deprivation of any essential—upon which such integrity of action depends—must be felt along the entire tract. An impression has been made upon this extremely sensitive organization which will be felt and made manifest in various ways.

I believe that there are many conditions of oöphoritis which would yield to patient treatment and constant observation, if the physician and patient would practice both. What matters it if the period extend over months and years, if in the end the woman shall find surcease from suffering, and shall carry with her all of the organs with which she was created? I have not regretted following out such a plan in six cases which I have had under observation for long periods of time. Turkish bathing, attention to secretions and excretions, with special reference to the skin, the direct application of the galvanic current to the ovary, if there be sufficient salpingitis to allow the passing of a very fine electrode (such a procedure I reported during the month of August in the *Philadelphia Medical News*), general faradization, massage, counter-irritation over the ovary, iodoform vaginal tampons, and well-regulated home rules of hygiene will accomplish very much. Not for a week, nor for month, but for a year, or two years or more, must this treatment be kept up. It is hard on the doctor, and it is hard on the patient. The results are not immediate; they creep on insensibly. It is a long road, but the end will crown the labor.

Looking at the vaginal tube as it exists normally in a condition of rest, the walls are all seen to fall together, so that by their constringing properties they give more or less support to the uterus. The anterior and posterior culs-de-sac, or the vesico-and recto-peritoneal folds, are so arranged that the finger pressed well up into either will permit the physician to manipulate the body of the uterus. So, too, may he arrive at the same step by using the rectum, and even the bladder. But he never *directly* moves the uterus; neither can he do so in any of these ways. He can indirectly tilt it by using the cervix as a lever, or by conveying the impression through the peritoneal folds, anteriorly or posteriorly. From the very anatomy of the parts no mechanical instrument can ever be devised which shall accomplish more than the finger can do, or which can accomplish as much as the finger with as little danger of bad results. The uterus is a highly sensitive organ, in intimate relationship with every other part of the body; and seldom does it bear manipulation with impunity.

When an inventive medical man threw upon the market a lot of most irrational devices, called "pessaries," which are correct in no single particular, he placed a dangerous weapon at ready hand, and one which has brought untold misery into the world. Foreign bodies are intolerant everywhere. The vagina is no exception to the rule. What happens in a case of retroversion, when the pessary is used? In the first place the proper lumen of the vaginal tube is put upon the stretch, so that whatever supporting powers it may have possessed are lost. The walls are chafed, and interfered with in such degree as often to overlap the arms of the instrument. The rectal cavity is narrowed, so that the lower bowel is emptied

with difficulty, and impacted fæces are often present. Rectal tenesmus may supervene. The bladder is irritated, and we have vesical tenesmus. The body of the uterus, or rather a part of it, presses upon the hard curve, and it is made to support the weight of the entire organ, which is prolapsed and bent backwards as well. It pressess the instrument towards the rectum, and conversely, the distended rectum pushes the pessary against the fundus. The tendency of the uterus is downwards and backwards, it is congested and irritable; go between the endeavor of a distended rectum to push the uterus upwards and forwards, and the constant tendency of the misplaced organ to fall downwards and backwards, the pessary is severely pressed upon, and inflamation results. Moreover, the curve of the pessary which is extended to support the fundus in a normal condition, so that the cervix may assume a normal position, does not give this support; and does not accomplish the end conceived in its construction. The entire weight of the uterus is assumed by a small semi-circular band of the organ only. You may caution a woman over and over again about keeping her bladder and rectum empty, but there are times when she cannot, and there must always be more or less intolerant pressure.

In a purely mechanical and anatomical sense, it may be said that a pessary in the rectum or bladder would do about as much good, and would be a conception quite as logical. Of what possible service can the most ingenious pessary, even that of Gehrung, be in cases of acute anteflexion? I have seen so many unhappy sequelæ from pessary wearing, and have myself obtained so few satisfactory results from using them, that I speak feelingly in the matter. The most ardent supporter of the pessary can only offer certain very limited possibilities for using it. He can do no more, if he be a good anatomist, and even the advantages which he may claim, may prove to be disadvantageous, if the possible evil results be weighed in the balance. Mechanical support can be given the uterus by cotton tampons much more safely, for one reason, and with greater claim to scientific appliances, for another. They will adapt themselves to curves and positions; and they will not interfere with any of nature's laws. In the forward displacements, slow and well-directed dilatation, kept up for months, will do vastly more than the stem, which, even if it do not light up an inflammation, will accomplish nothing of permanency. They are only valuable when in position. The uterus once relieved of their presence returns at once to a former position. Even in hands of the most scientific they frequently occasion mischief. I do not believe that any gynæcologist of the day believes these supports to be scientific inventions, but they rather are the makeshifts of imperfect knowledge. My conviction s that better results, without any risk, results that are better locally and constitutionally, can be obtained by conservative practice, by attention to every detail of life, even those the most insignificant, for the aggregation of the little things go to the making of the big ones, and also, by attention to psychical conditions and reactions. The woman should be treated objectively and subjectively. Ill-directed local treatment very frequently aggravates every symptom, and stamps a history of future suffering upon the entire life of the patient; simple conditions depending upon a departure from normal standards; new simple remedies, based upon a thorough knowledge of the laws governing such conditions, and not directed solely by cursory reading of text books.

Again, it seems to me that there are possibilities in electricity, not sufficiently known, which may make great changes in future treatment. Tripier has already gone far in this direction, and what he has written of the treatment of displacements by electricity may be read with much interest.

There is yet one more thought that suggests itself. It is hardly possible for the sexual apparatus to suffer without there being a corresponding derangement in almost every other viscus. The reflex symptoms are not to be overcome by local treatment only. Build up, reëstablish the functions that are working badly, and you will not only place the patient in a much better way for the special interference, but you will much more surely bring about a happy result. Local treatment satisfies the local condition only, and it may fail in even accomplishing this much. Instead of fostering a woman's energy, it weakens and vitiates it by exciting new and irritating processes that feed upon her nervous vitality. Great elaboration of detail, exaggeration of treatment, and intricate preventive advice may be sources of mischief, and are not often demanded in any instance.

The simple pad of Garrigues is a valuable suggestion, but few men would undertake the elaborate system of rules advised by Thomas in management of the lying-in woman. How many cases of dislocated uteri are ever permanently cured? How many cases of lucorrhœa yield to excessive local treatment only? How many neurasthenic women respond immediately to the local interference addressed to a uterus, which may happen to be out of place? If there be one truth above all others of most importance, it is to go slow. *Festina lente* ought to be the watchword of every gynæcologist.

I have spoken strongly in the matter of pessaries, more strongly, perhaps, than facts will justify. It may be urged that a properly adjusted instrument does not interfere with the rectal tube, since the rami embrace it without constricting it; that the bladder cannot be irritated, as the smaller end rests only against the bony structure of the pubis; that the fundus never presses unduly, since the pessary does not force the uterus into place, but only holds it *in situ* after it has been once restored to a normal position; and that it is only intended to act as a mild support until the ligaments shall have contracted by rest. If all vaginæ were of the same length and calibre, if all uteri were equally tolerant of interference, and if all uteri, once restored, would remain so, these objections would be of serious moment. But the facts are these; Uteri differ most signally in their appreciation of manipulation; some will tolerate almost any amount of handling, while the least interference will light up an inflammation in others. Many vaginæ are so short that they must be lengthened before any contrivance will be of service.

With retroversion there must *always* be some prolapsus and congestion. The congestion is a result of the displacement and will only disappear with the exciting cause. The congestion causes increase in weight, and this increase in weight causes a tendency to drag the whole structure downwards. If a pessary be now applied, there must be more or less pressure upon the bow from the very nature of things. The ligaments are relaxed and will not hold the uterus in place, handicapped, as it is, by an abnormal weight. The pessary has been measured properly, with such expansion of the rami that the rectum may not be disturbed; what will result? The super-sensitive uterus is pressing hard against an unyielding body, which body itself, thus encroached upon, is crowded into the vaginal walls. This condition, the general one, and not regarded as especially significant of danger by the majority of practitioners, may become alarmingly aggravated by distension of the rectum or bladder, by sudden physical or mental shocks, or by the changes engendered by menstruation. These conditions, in whole or in part, may be beyond the control of the woman, and are liable to occur to anyone and at any time. No amount of present mechanical ingenuity can meet the possibility of a future unfavorable contingency. Neither can any man predict what accident of environment will fall to the lot of his patient. Moreover, no physician can satisfy himself thoroughly of the sensitiveness of any uterus, save only after the lapse of weeks. If it be urged that the pessary should not be applied until after the congestion has disappeared, the answer naturally occurs, that such a waiting would be continuous with the life of the patient, and would terminate only at her death. The congestion depends upon the dislocation: the dislocation depends upon a relaxation of the ligaments. Upon what does the weakened condition of the ligaments depend?

Just here is where all that I have written so haltingly and with such a sense of my own shortcomings, culminates. Go to the foundation; let the uterus alone for a time. Build the woman up, mentally and physically. Then reduce uterine congestion by medicated tampons; restore it by the postural treatment. Keep it in place, if necessary, by tampons. The primary steps in the treatment being fulfilled, in the hands of a thoroughly scientific physician, a perfectly fitting pessary may be worn, but only after other indications have been met. For myself I cannot look upon them as desirable inventions, and I never make use of them. Anterior and posterior ulceration of the vaginal walls may result from the long use of a pessary. Infectious muco-purulent products may be absorbed by the lymphatics or veins. Dr. Kelly (*Philadelphia Medical News*, October 18, 1884,) has recently reported a death caused by a pessary; others of similar nature are on record. I maintain that while these sporadic cases may now be regarded as curiosities of medical literature, yet they are dangers that *may* occur in the practice of even the most intelligent physician. No instrument can claim to be a scientific one which shall entail any possible danger in its use.

Conservative gynæcology does not necessarily mean that surgical interference is interdicted, but it does mean that only such treatment shall be made use of as shall be the one which shall be the best calculated to foster the vital energy of the patient, and shall restore to the nearest possible normal, the abnormality.

THE ETIOLOGY OF TUBERCULOSIS.

BY H. F. FORMAD, M.D.

OF PHILADELPHIA, PA.

Presented in Section on Practice of Medicine and Materia Medica of American Medical Association, May 8, 1884.

Dr. Formad opened the discussion on this subject, but refrained from presenting it for publication, as a similar paper, by himself, and giving his views in full, had just been published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 26, 1884.

He said, in the remarks which he read before the section, that he was not at liberty to present any additional matters upon the subject, being about to publish, in conjunction with Professor William Pepper, Provost of the University of Pennsylvania, a monograph on tuberculosis, in which the whole of his research and experiments, upon which his views were based, will be related with full details.

Dr. Formad's paper elicited the following

DISCUSSION.

DR. AUSTIN FLINT, SR., thought that if tuberculosis was an infectious disease, produced by a parasite, its contagiousness would follow, as a matter of course. The presence of a parasite had been demonstrated. The great preponderance of evidence is in favor of the view that it is uniformly present in products recognized to be tuberculous. The bacillus is not found in products which from other characters are considered to be not tuberculous. The conclusion which he had reached was that there was some essential connection between the presence of this parasite and the tuberculous disease. In regard to the contagiousness and inoculability of tuberculosis, he thought that all testimony was in favor of this. Other causes may coöperate, and undoubtedly do coöperate in the product of tubercle, but the presence of the specific parasite is essential.

DR. WILLIAM H. WELCH agreed with Dr. Flint. Dr. Formad had spoken of tuberculosis produced by inoculation of other substances than the bacillus. If bacilli be the sole cause, the condition can, of course, be produced in no other way. Koch, in his experiments, had taken every precaution to prevent error. He had, with better methods of investigation, found the bacillus in every case. When the difficulties of the process required for the detection of the bacillus is considered, it is not at all wonderful that at times it should not be discovered. The essential point of Dr. Formad's objection is whether or not tuberculosis can be produced by other causes than the bacillus. The weight of evidence is in favor of the view that tuberculosis can be produced by the inoculation of no other substance than the bacillus tuberculosis.

DR. GEORGE M. STERNBERG, U. S. A., had not been

able to reach any definite conclusion in this matter. He had performed some experiments, but they had not been conclusive. He thought that the suggestion of Dr. Formad, that the bacillus might act as a local irritant, was worthy of consideration. He suggested that possibly the reason why tuberculosis had appeared in animals which had been inoculated with other matters than the bacillus, might be that the animals had developed the condition from being kept in unsuitable quarters.

DR. R. S. FITZ, Massachusetts, thought that the pith of Dr. Formad's remarks lay in the statement that he had produced tuberculosis without the bacillus. It may be that he considered that tubercles were not really such.

DR. JAMES TYSON, Philadelphia, had hoped that Dr. Formad would have produced some carefully detailed experiments. When Koch's theory was first advanced, he thought it would share the fate of previous theories of this kind. Instead of that it had been constantly gaining strength. The only way that the matter can be settled is by a repetition of the experiments to decide whether Koch or whether Formad is right. One point in regard to the contagiousness of tuberculosis and to its infectiousness. Dr. Flint thought that one would follow from the other. Tuberculosis may be infectious, and yet not be contagious. Malarial fever is an infectious disease that is due to a specific cause, but it is not contagious—thet is, communicable by contact. It may be proven that tuberculosis is infectious before it is shown that it is contagious.

DR. JANEWAY related a number of cases which he thought went to show tuberculosis was contagious.

DR. C. DENISON, of Denver, Col., said there were three considerations which had not been mentioned by any of the speakers, but which seemed to him to have an important bearing on the subject under discussion. The points he would make were favorable to a definite etiological relation between the bacillus of tubercle and tubercular lesions, because they in part supply the conditions essential to such relations:

First—The argument based upon the analogy between tuberculosis and croupous pneumonia as an infectious disease. The speaker called attention to the intimate relation both of these diseases have to "malaria," so called, the sections of the United States which are most malarious being fruitful in both acute tuberculosis and croupous pneumonia. The idea that croupous pneumonia is infectious, is much strengthened by studying the geographical distribution of that disease. The speaker had noticed, during eleven years residence in Colorado, the remarkable infreqency of true croupous pneumonia there, as compared with his previous experience in Connecticut. He believed that if mistakes could be corrected in the death statistics in regard to pneumonia in the 1870 census, and catarrhal, broncho- and pleuro-pneumonia—which are the forms which prevail in Colorado—could be eliminated from the statistics, the result would be that croupous pneumonia would be consigned almost wholly to malarious districts, and in some proportion to malarious element, festered as it is by *warmth and soil moisture*. In support of this point, the speaker referred to the percentage of deaths from pneumonia to all deaths as given in the U. S. census of 1870. Of course all other forms besides the croupous variety were included, yet the twelve highest per centages in order by States were as follows: Arkansas, Texas, Alabama, Kansas. Mississippi, Florida, Georgia, Missouri, South Carolina, Kentucky, Virginia, Tennessee, and these ranged twelve (12) per cent., while the twelve lowest percentages in order from least to greatest were Montana, Idaho, Washington, Wyoming, Oregon, Colorado, New Mexico, Minnesota, Wisconsin, California, Michigan and Vermont, with an average of 4½ per cent. of deaths due to this disease.

2. The argument, based upon climatic conditions, which favor germination, *i. e.*, the chief characteriteics of a given climate which is likely to produce tuberculosis as compared with those of a climate giving approximate immunity from the disease. The consideration of the geographical distribution of phthisis, in our own country, leads to the conclusion that the humidity and temperature of the atmosphere are very closely associated with the greatest prevalence of consumption. Assuming that the statement is admitted, without presenting many possible proofs, that *warmth* and *moisture* are most important conditions for germ development, both within and without the human body; in fact, that these attributes aid in furnishing a favorable soil for the lodgment and growth of the bacilli of tubercle; assuming these things as known, the additional fact that the opposite conditions, *cold* and *dryness*, predominate as immunity is secured, is mentioned as a most important announcement which has been lost sight of in the histological discussion of tubercle. The speaker presented humidity charts of his own device, graphically illustrating by seasons the dry and moist halves of the United States. The moisture of the atmosphere was shown in four shades of blue, and the dryness by four shades of red colors, each shade representing an equal division of the whole climate, and being made up of the combined cloudiness and the relation and absolute humidity of the air as shown by all the signal service records for the year.[1] It was thus plainly seen that the greatest humidities were in localities admitted to be fruitful in tubercular disease, and the least humidities in localities known to give the greatest immunity from such diseases. Elevation coming in, in harmony with this general conclusion to increase that immunity. Thus warmth and moisture, the friends, are put in striking contrast to cold and dryness, the foes, to germination.

3. The opponents of the bacillus, as the germ cause of phthisis, have assumed unwarranted liberties in their negative judgment, since they have taken no account whatever of the *eliminating power natural to every living thing*. The speaker had never heard one of these opponents admit that that, which, under more favorable conditions, might have proved infectious, had been eliminated by a system in a vigorous state of health, a condition antagonistic to the de-

[1] These charts are preliminary drafts of a seasonal climatic map which, with an annual climatic map of the United States, are being prepared by Messrs. Rand, McNally & Co., of Chicago.

velopment of the bacillus of tubercle. Yet there is reason to believe that this is a frequent occurrence in the lives of many of us, especially those physicians who are often brought in contact with active phthisis. How better can we account for the fact, mentioned by Dr. Sternberg in his remarks, that certain guinea pigs, when allowed plenty of liberty in a grassy field, kept fat after tubercular inoculation, and finally when killed the bacillus was found in all of them? Is it not reasonable to account for this result diferent from that usually obtained, where animals are confined in close quarters, by the counteracting influence of the power elimination due to healthful living?

There seems to be a law in nature, that the lower the forms of life, so much more ample are the possibilities, both of multiplication and destruction, of these forms, Pasteur is said to claim that under the most favorable conditions possible, one parent bacillus anthracis can multiply to three millions in twenty-four hours. Certainly a startling statement, yet, if true, of much importance as indicating the great destruction of germs in their infancy, or the unsuitableness of the soil they fall upon, in order to stem such prolific increase. If any such reasoning holds good with the bacillus tuberculosis, it is not hard to conceive that those conditions of health, which are the heritage of the normal man, are the great destroyers of the bacillus. Indeed, the further we investigate this subject the more there seems to have been ample chance for infection, wherever the bacillus of tubercle is found. There is a lack of conclusiveness or force to any argument against the supposed etiological relation of these bacilli to tubercle or phthisis, which takes no account of this possible destruction, — the eliminating or counteracting power of healthful life processes. On the other hand, the cleansing and health-restoring influence of fistulæ, issues and counter-irritations; of hydrocarbons, nervines, alteratives, antiseptics, etc., and of complete respirations in a cool, dry, rarified atmosphere, favoring an increased exhalation of moisture over that inhaled, and constant use of the contaminated lung; in fact, *all practices* that we know to be remedial to phthisis, point to a positive and progressive character of disease, the etiology of which has no better or more consistent explanation than that afforded by the bacillus of tubercle.

DR. W. T. BELFIELD, Illinois, could not agree with the theory that tuberculosis was due to bacteria. He believed that it was not due to bacteria, but to internal causes, or to conditions in which the patient was placed.

DR. E. O. SHAKESPEARE, of Philadelphia, after an extended review of the matter, concluded that tuberculosis was often an infectious disease; that often it was due to a specific, pathogenic, parasitic agent, and that so far it has not been demonstrated that anything besides the tubercle bacillus can produce the disease.

DR. G. E. SMYTH, of Green Castle, Ind., remarked that the discussion of all scientific subjects should be strictly non-partisan in character. In order that the physician or scientist may be impartial in investigating or discussing a subject like the one under consideration at present, it is absolutely necessary that all preconceived opinions should be discarded. He who has formed or expressed an opinion is disqualified from serving upon a jury at law. The theorist in medicine, who has preconceived opinions, is not a safe investigator. The day of theories in our profession is past. Facts are what we are in search of now. One fact established by indisputable evidence is worth a thousand theories however plausible they may be made to appear.

Koch's discovery of the bacillus tuberculosis has, in my judgment, been subjected to very unfriendly and, I might say, unjust criticism; not so much by the author of the paper under discussion at present as by others.

There seems to be much confusion existing in the minds of the profession in regard to the exact meaning of the terms contagion, infection, etc., the terms being frequently used as synonyms. All contagious diseases are infectious, but all infectious diseases are not contagious. Infectious diseases should be divided into three or more classes or divisions, based upon the manner in which the poison is conveyed from one patient to another, its absorption into the system, together with its subsequent behavior.

The first class under this method of dividing these diseases should include the purely contagious diseases —or those during the course of which the poison is sufficiently matured to be conveyed directly to an uninfected party who is susceptible to its action—of which small-pox, measles, scarlet fever, typhus fever, are good examples.

The second class, which is of equal if not greater importance, is not strictly contagious, because the infecting material has to undergo a period of development or growth after it escapes from the body of the patient, before others can be infected by it. To this division belong such diseases as typhoid fever, epidemic dysentery, Asiatic cholera, etc.

There is still another division which is purely miasmatic in character and although strictly infectious, cannot be communicated in the same manner as the diseases mentioned in either of the other divisions. In this division will be found such diseases as malarial fevers, croupous pneumonia, acute articular rheumatism, cerebro-spinal meningitis, etc. Perhaps other divisions or classifications will be added to these, as our knowledge of the subject is extended, and one may be found for tuberculosis and other chronic infectious diseases.

Let us assume now that all the infectious diseases, both acute and chronic, are caused by the introduction into the system of low but living micro-organisms. Whether they constitute the real contagion or are simply carriers of something still more subtile which has heretofore escaped our attention, is not germane to the argument.

It is necessary that this contagious material be brought into contact with a fruitful soil. This simply means that the person who receives it possesses what is known as a predisposition either inherited or acquired, and for which we may at some future time

be able to give an anatomical explanation as we can now do with many surgical diseases.

Clinical observations have established the fact beyond the possibility of a doubt that the predisposition, or what is the same thing, the susceptibility to the action of the poison of certain infections, is very great in some families and almost entirely absent in others.

This fact has been demonstrated frequently in large tenement houses, especially in New York city, where whole families have been destroyed by such diseases as diphtheria, scarlet fever, etc., while other families, occupying the adjoining apartments upon the same floor and equally exposed, have escaped without a case.

The predisposition to croupous pneumonia is strong in some families, and almost, if not entirely, absent in others. Some families are exempt from this disease while in others it appears in some member in every generation. The same is true in regard to articular rheumatism. There are doubtless present many practitioners who have had these diseases appear in certain families through several generations, while other families under their care have escaped them entirely.

It is not every person that can be infected with the poison of any given disease. Many persons will not have small-pox or measles. So it is with tuberculosis. Many persons cannot be infected with the disease, at least in the ordinary way in which infectious diseases are communicated. If consumption is infectious, it perhaps should be classified with the local infectious diseases, such as syphilis, leprosy, etc., the system at large becoming infected subsequently from the primary local lesion, thus accounting for many recoveries in patients where the predisposition is slight and the power of resistence being great, enabling them to throw off the disease.

It is admitted by the author of the paper under discussion that the bacillus tuberculosis is nearly always present in or during the tuberculous process, that it is diagnostic of the process to a very great degree, and he also admits that they are sometimes the cause of the disease by being lodged in the lungs, and by their presence exciting the tubercular process. These are dangerous admissions for the author to make. It is not claimed by the most earnest and ardent supporters of the germ theory of disease, that the mere presence of the germ is sufficient to account for the phenomena of infectious fevers. It is the propagation and growth of the germ, with the consequent oxidation and destruction of the tissues, which gives rise to the subsequent phenomena. If the bacillus tuberculosis is ever the cause of consumption, may not subsequent investigations prove that it is always so? This is a question of such vast importance that time will not admit of its discussion.

Clinical observations seem to go for naught with the author of this paper. This virtually takes the case out of the hands of the greyheaded veterans of the profession, no matter how careful and painstaking they have been in their observations. It turns the entire case over into the hands of the specialist on microscopy. I have always attached great importance to the natural history and the clinical appearances of all diseases. Valuable information is certainly gained in this way. I was convinced early in my professional life that there was a probability that tuberculosis was an infectious disease by the manifestations of the disease in several instances, one or two of which I will relate.

Two brothers, members of a tuberculous family, and whom I shall designate as A B and C D, aged respectively 26 and 29, painters and glaziers by occupation. A B contracted consumption in 1865, and died after an illness of eighteen months. He was nursed by the wife of C D, who (the wife) was a member of a family consisting of thirteen children, all of which are still living. No case of tuberculosis has ever occurred in any branch of this family for the last three generations. This includes uncles, aunts and cousins. The wife of C D, who nursed and cared for A B, contracted the disease, and died in about ten months, while C D, the husband who is strongly predisposed to the disease, escaped and is still living.

W. B., aged 22 years, and whose occupation, previous to enlistment in the army, was that of a farmer, returned from the army at the close of the war of the rebellion, with well-marked symptoms of consumption, which terminated his life in a few months. He was a member of a family consisting of father and mother and eleven children (seven girls and four boys). The paternal and maternal grandparents had been pioneers in the early settlement of the county, and both branches of the family were entirely free from tubercular affections. I investigated the history of the family carefully myself, and am personally acquainted with it for three generations back. They were farmers in good circumstances, well fed and clothed, and comfortably housed. Two of the sisters of this patient were his constant attendants.

They both contracted the disease and perished from its effects, and in turn were nursed by other members of the family who contracted the disease and also died. This process was continued until seven of the children were slain by the disease, and finally the father, aged nearly seventy years, took the disease and died, the only members of the family who escaped being the mother, who was an invalid and confined with chronic rheumatism in a distant part of the house and unable to render any assistance in nursing, one son and one daughter who were married and living several miles distant, and one younger son who was too young to be of service as a nurse, escaped and are still living.

Many other cases have fallen under my notice similar to these, and perhaps there is not a practitioner within the sound of my voice but who has had a similar experience. These are stubborn facts, they are seen every day by the general practitioner, and, unlike the bacillus, they don't require the aid of the microscope. If physicians would report these cases, so that they could be tabulated, an array of clinical facts could be produced which would be valuable if not convincing.

The world owes a debt of gratitude to Koch for his discoveries in this field of observation. So are we indebted to his critics. It is by continual agitation

investigation and discussion that we finally arrive at the truth.

No great discovery or improvement has ever been accepted unquestioned by the medical profession. It was twenty-five years after Harvey demonstrated the circulation of the blood before it was accepted by the profession at large, and it is recorded in history as a fact that no member of the profession who was then over 40 years old ever gave in his adherence to the doctrine. The same is true in regard to Jenner's discovery of vaccination.

In 1809, when Ephraim McDowell, of Kentucky, demonstrated the practicability of ovariotomy, he was assailed by every prominent surgeon then living, and the operation was compelled to fight for a full half century, and finally established itself as a legitimate operation, but over the dead body of every prominent surgeon who was practicing at the time it was first proposed.

DR. H. C. ERNST, Massachusetts, agreed with Drs. Welch and Fitz, and then went on to describe the advantages and disadvantages of the different staining processes which had been recommended, and then called attention to the fact that in performing these investigations nothing less than an immersion lens, with some sort or sub-stsge illuminating apparatus, would give reliable results.

DR. WILLIAM PEPPER, Philadelphia, had observed similar cases to those described by Dr. Janeway, but his observations had led him to a directly opposite conclusion. He did not believe in the contagiousness of tuberculosis. In the experiments which Dr. Formad had performed, great care was taken to place the animals under the best hygienic surroundings; some were sent to the country, and all were given plenty of fresh air. He thought that there were many other ways of explaining the connection of the bacillus and tuberculosis than the assumption that the bacillus held a casual relation to tuberculosis.

DR. TRAILL GREEN, of Easton, Pa., did not believe that tuberculosis was a contagious disease, and referred to the fact that working in grindstone factories would soon induce tuberculosis in perfectly healthy individuals.

In closing the discussion, DR. FORMAD said that he was highly gratified, and felt thankful to the section that so much time had been allowed to a debate which had been so interesting and instructive to him. He did not see fit to comment upon the remarks of the many prominent gentlemen who participated in the discussion; yet he felt somewhat disappointed, for he had hoped that more stress would have been laid upon facts than on views, and that some accounts of active personal work would have been elicited. He thought that Koch had not made out his case fully, and that it brought others into misconception to rely upon his statements in regard to the etiological relations of his bacillus, and that it would be well to await further developments in a question of such grave importance, instead of jumping with Koch to hasty conclusions. To the merits of Koch's discovery in regard to the diagnostic value of his bacillus in tuberculosis, Dr. Formad did full justice.

A CASE OF CALCULUS OF THE URETHRA.

BY L. H. DUNNING, M.D.,

OF SOUTH BEND, IND.

J. S., a farmer, consulted me on August 4, 1884, for the removal of a stone from the urethra. He stated that he was 62 years old, and that for a number of years he had suffered intensely at times in consequence of gravel; that he had at times passed small gravel, but had no suspicion of the presence of a stone in the bladder. Some time in January, 1884, a stone, which he thought to be as large as a hickory nut, had entered the urethra from the bladder, and passed down and lodged in the penis, just behind the glans. At this point it remained and gradually increased in size until he presented himself for treatment.

The penis then measured seven and one-half inches at its point of greatest circumference, which was three and one-half inches posterior to the meatus. The whole penis was much enlarged and of a dark livid hue. Several openings, readily admitting the passage of a small probe, were found leading from without inwards into the urethra posterior to the stone. The external orifices of these false passages were slightly excavated, and presented an almost gangrenous appearance, and from them the urine was oozing constantly. The patient stated that two or three weeks previous to this time he had noticed that but little urine escaped from the orifice of the urethra, and thinking that the stone had plugged the passage, he one day made a hole with a gimlet through the center of the stone parallel with the urethra; but he found that even then the urine could pass through the orifice only drop by drop. He tried to remove the whole of the calculus, but failed.

On August 7, assisted by Drs. Hitchcock and Gist, of this city, the stone was quickly removed. An incision one and one-half inches long was made in the urethra, from the orifice backward. The stone was crushed and removed in fragments. A pouch was found, in which the stone had rested, of sufficient size to hold fully one ounce of water. The weight of the stone was afterward found to be 300 grains. The walls of this pouch were dense and hard. An unsuccessful attempt was made to pass a small bougie from the bottom of this pouch into the urethra. There was doubtless a communication between the pouch and the urethra, but it was so small or so well concealed that it could not be found. With a view of making a free passage for the urine, I cut down upon and into the urethra just in front of the scrotum, and passed a grooved director forward along the urethra until the pouch was reached; then along the groove of the director a sharp-pointed probe was passed through the posterior wall of the pouch, the end of the director being made to follow it, after which the opening was enlarged with a probe-pointed bistoury. Having no suitable silver tube with me, a portion of a soft rubber catheter was passed through the pouch into the urethra, beyond the posterior extremity of the incision, and made fast. An effort was made to pass a small bougie into the bladder, but it was unsuccessful, as it was impossible to carry the bougie

beyond the bulbo-membranous portion of the urethra. Concluding that all had been done for the patient that could be done at this time, the wounds were closed by interrupted sutures, properly dressed, and patient put to bed.

He rallied well, and everything went favorably until recovery took place, three weeks after the operation. At the end of that time the wounds were almost healed, and the patient was around the house. On August 11, four days after the operation, the patient passed voluntarily a small stream of urine, and again on the next day. After that date he had almost complete control of the urine, there being only a slight amount of incontinence after the first week.

The incision nearest the bladder healed partly by first intention, and the remainder rapidly filled by granulation, so that at the end of six weeks it was closed. The tube was removed every day, and cleansed and replaced. At the end of the first week its use was discontinued, though a soft bougie was introduced every few days.

The patient gradually regained his health, so that during the past winter he has been in a better condition, physically, than for a number of years. He suffers no pain and discharges a small-sized stream of urine without much effort. He persistenlty refuses to allow anyone to explore the urethra or bladder, being content to let well enough alone, and is happy in having been so fortunate as to escape from so serious a dilemma.

MEDICAL PROGRESS.

ANATOMY AND PHYSIOLOGY.

ON THE SOURCES AND THE EXCRETION OF CARBONIC ACID IN THE LIVER.—Dr. J. J. Charles, in the *Journal of Anatomy and Physiology* gives a very comprehensive view of this subject. He assumes that a molecule of albumen might be supposed to combine with 50 molecules of water and yield 8 molecules of urea, 7 of glycogen, 5 of carbonic acid, 7 of oxygen, and 1 of sulphuric acid. The oxygen might enter into combination with reduced hæmoglobin or other substances. Carbonic acid has been obtained in the laboratory from albumen. We can readily believe in the albumen of the tissues, particularly the muscular and the nervous, undergoing these chemical changes during its metabolism, and so account for the carbonic acid present in all the tissues, and for the urea found in some of them. There can be no doubt that the destruction of albuminous material is most active at the liver, for this organ, as we know, contains about a fourth of the total blood of the body; besides there is to be found in the liver a great number of nitrogenous substances intermediate between albumen and urea, such as leucin, tyrosin, xaultrin, hypoxaultrin, uric acid, etc. According to most authorities, also, there is more urea to be met with in this organ than in any other in the body. The urea certainly cannot be derived from the blood by a mere process of filtration into the liver; for the nervous and muscular tissues, which do not directly produce urea, contain little or none of it.

Dr. Zuelzer advances the hypothesis that the higher albumen derivative hæmoglobin, is broken up in the liver into a number of simpler bodies, viz: taurocholic acid, glycocholic acid, bilirubin, urea, cholesterin, carbonic acid. He calculates that 13.332 grammes of hæmoglobin, with the necessary water and oxygen, yield 2.486 grammes of carbonic acid. A further decomposition of a smaller proportion of hæmoglobin with the formation of glycogen is probable. As 13.332 grammes of hæmoglobin yield 0.572 gramme of carbonic acid and 12.96 grammes of glycogen.

Owing to the destruction of red blood corpuscles which are constantly occurring in the spleen, a considerable quantity of hæmoglobin in solution is as constancy being carried to the liver. A calculation has been made which indicates that the duration of the life of a red corpuscle is, at most, about thirty days. There can be little doubt that, as Heidenhain and others suppose, albumen in some form is decomposed in the cells of the liver, and biliary and pigments form in the same cells as the glycogen. It is true that these two processes in the liver, resulting in the formation of glycogen and bile, though both are attended by a corresponding production of carbonic acid, differ markedly in that their periods of intenrity do not synchronise; and, further, in that whilst the biliary secretion continues during starvation, the formation of glycogen ceases.

The amount of carbonic acid excreted by the liver is very large. In the bile collected directly as it flowed from the liver of a dog, Dr. Charles found a total of 57 volumes per cent. of carbonic acid. That this proportion of carbonic acid is very great can readily be understood, when it is stated that there are only 34 vols. per cent. of the gas present in the arterial blood of the dog, and 46 vol. per cent. in the venous blood of the same animal. From the bile of the rabbit the only herbivorous animal in which freshly secreted bile has up to the present been examined, he obtained a total of 109 vols. per cent. of carbonic acid, free and combined, a larger proportion than has yet been discovered in the fluids of any animal, but only slight traces of oxygen and nitrogen.

With regard to the possible source of the large amount of carbonic acid excreted at the liver, two views suggest themselves:

(*a.*) That the carbonic acid is produced in the different tissues and organs of the body, the liver included, and some of it then passes out by simple diffusion or solution from the postal and hepatic capillaries into the bile (as may occur at the pleura in lymph undation), the hepatic cells not being specially concerned in the process; and

(*b.*) That in addition to this *general* formation of carbonic acid in the body, there is a *special* production of the gas at the liver, owing to the decomposition in the hepatic cells of such bodies as albumen and hæmoglobin. Of the carbonic acid thus generated in the liver, part will enter the blood and a larger quantity the bile, particularly if this fluid is alkaline. The amount of combined carbonic acid

in animal fluids or secretions depends, as a rule, on their reaction. If the secretion be alkaline, more of the tissue carbonic acid will leave the body by that fluid than by one less alkaline, while if neutral, or particularly if acid, scarcely any combined carbonic acid will be found in it as compared with the total carbonic acid in the blood. If the bile of a dog be alkaline 100 vols. may contain 57 vols. of carbonic acid; while if acid, there may be in 100 vols. only 5 vols. of the same gas. Urine, again, which is acid, contains only 14 vols. per cent. of carbonic acid; while in alkaline saliva there may be present as much as 50 per cent.

Accordingly, from the proportion of carbonic acid in the bile, it would be unsafe to estimate the total amount of carbonic acid generated in the liver. An exact knowledge of the relative quantities of the carbonic acid in the blood of the pestal and hepatic veins, would be very useful in such enquiries.

THE PIGMENTS OF THE SUPRARENALS.—Dr. MacMunn makes a communication to the *Physiological Society* entitled (*Lancet*): "On Myohæmatin, an Intrinsic Muscle Pigment of Vertebrates and Invertebrates; on Histohæmatin, and on the Spectrum of the Suprarenal Bodies." Physiologists have accepted Kühne's statement that the muscle owes its color to hæmoglobin, but Dr. McMunn contends that though the greatest number of voluntary muscles do owe their color to it, yet it is accompanied in most cases and sometimes replaced by myohæmatin. The cardiac muscle of every vertebrate animal examined by Dr. McMunn yields myohæmatin, which gives a very beautifully defined spectrum, totally distinct from any product of decomposition of hæmoglobin, *e.g.*, methæmoglobin, acid, or alkaline hæmatin or hæmatoporphyrin. In order to demonstrate the spectum of myohæmatin no reagent whatever is required. The spectrum consists of three bands, two of which persist after the bands caused by hæmoglobin have disappeared. The bands have been missed by other observers, simply because the presence of well-marked bands due to myohæmoglobin hides those caused by the presence of myohæmatin. The first band of myohæmatin occurs just before D, the next two are narrow, and placed between D and E, and two other faint bands may be present near the violet. Dr. McMunn has found myohæmatin in the cardiac muscle and some voluntary muscles of many in animals, birds, reptiles, amphibians and fishes. This coloring matter has also been detected in many invertebrate animals; indeed, it was first discovered in them. The substance is said to have been separated by digesting muscle in a pepsin solution, but it was slightly changed in the process; it was also obtained from the frozen myocardium of the rabbit by pressing out the plasma Histohæmatin is a name given by the author to a class of pigments of wide distribution in the animal kingdom. Myohæmatin belongs to this class of pigment. The histohæmatins are believed to be respiratory pigments, for they can be oxidised and reduced in the solid organs, where they are found. Their absorption bands occupy almost the same place as those of myohæmatin. In the suprarenal capsules of many mammals the medullary substances gives the spectrum of hæmochromogen, while the cortex shows that of a histohæmatin. Wherever hæmochromogen is found it is probably excretory, and Dr. McMunn has only met with it in the liver and in bile, so that it must be regarded as excretory in the adrenals. It may be that the function of the adrenals is in part to metamorphose effete hæmoglobin or hæmatin into hæmochromogen. Disease or removal of the organs prevents the removal of the pigment; hence pigmentations of the skin and mucous membranes set in. Vulpian has shown that taurocholic acid is present in the medulla of the adrenals, of which the structure is like that of the liver; the presence of large lymphatics, together with the consideration of the facts of structure and of the well-known results of diseases of these organs, tends to prove that an active metabolism takes place in them, and Dr. McMunn believes that he is justified in concluding that these organs have a share in the downward metamorphosis of effete coloring matter.

MENSTRUATION IN AN INFANT.—Dr. V. Derveer (*Il Morgagni, Lancet*) relates the case of an infant girl, who, when barely four months old, commenced to menstruate regularly. When two years and seven months old she weighed forty pounds. She had the facial expression and physical conformation of a girl from ten to twelve years of age. The mammæ were of the size of small oranges, the mons veneris well developed and covered with hair, the labia majora and other parts of the vulva fairly developed. The child was very intelligent, but of an irritable temperament, which was especially marked at the approach of the catamenial periods. These recurred as a rule every four weeks and lasted four or five days, but at one time were interrupted for three months. The child was then exceedingly irritable, and had sleepless nights, but perfect health was restored as soon as the menstrual regularity was re-established.

MATERIA MEDICA AND THERAPEUTICS.

THE ACTION OF PARALDEHYDE.—Dr. S. A. K. Strahan, in *The Lancet*, writes very favorably of the action of this new hypnotic. As a sleep-producer he ranks it with chloral, while in anything like moderate doses it approaches in safety that safest of all sedatives, bromide of potassium. He has employed it over one hundred and fifty times in about twenty-five cases, and has found but two patients who did not respond to medium doses of the drug. One of these was suffering from acute mania, and the other from severe facial neuralgia. He has given it in mania, acute and chronic, melancholia, dementia, the various stages of general paralysis, and in simple cases of insomnia. Paraldehyde acts more quickly than chloral. When a dose is taken a feeling of warmth, a kind of grateful glow, is experienced, and the patient is often asleep within ten or fifteen minutes. The sleep induced is a nearer approach to natural sleep than that obtained by the administration of any other drug; the breathing is somewhat slower and deeper than in the waking hours, while

the pulse becomes slightly less rapid and possibly stronger. The temperature (surface) is not changed, the flow of urine is increased, and the skin is not affected. No headache or other unpleasant symptom is experienced on waking, and the appetite is not injured even by the daily exhibition of the drug for considerable periods in one case for over three weeks.

The dose is from thirty to ninety minims, but more than sixty drops is seldom required to induce sleep; and this, or even a smaller dose, repeated within an hour is much more effective than a single large dose. The paraldehyde is best given as its first administrators recommend; that is, with a bitter tincture in sweetened water. It has a pungent tase, but a drachm, when combined with fifteen drops of tincture of orange and an ounce or more of water sweetened with syrup, makes a not unpleasant draught, never causing nausea or vomiting. The drug is given off principally or wholly by the lungs, and may easily he detected in the breath for ten, twelve or more hours.

There is one advantage which this drug possesses over chloral which at once gives it a place among our most useful hypnotics, and that is the absence of any depressing or paralyzing action on the heart. This permits of its being given with perfect safety to general paralytics and others to whom chloral would only be given with the greatest caution and with constant anxiety as to the result of even small doses.

Methyl Iodide.—Dr. B. W. Richardson, in the *Asclepiad*, finds methyl iodide to be an anæsthetic and powerful sedative. A grain can be taken diluted in alcohol with safety for a dose, and in a case of syphilitic ulceration produced the most rapid curative result. It was used under his direction in four cases of cancer; in one of these, where extreme hyperæsthesia of the whole surface of the chest had followed an operation performed a year before, complete relief was obtained from the iodide when other means had failed. In the second case, one of uterine cancer, there was relief to pain. In the third instance, one of recurrent cancer, the good effects were less apparent; but in the fourth, an open ulcer in the breast, cicatrization occurred under the iodide, and the patient left the hospital (Middlesex) with the ulcer quite healed. Some time afterwards, however, there was return of the deposit. The alcoholic solution of methyl-iodide for internal use is made by adding 6 grains of the iodide to 60 minims of absolute alcohol. The dose is 10 minims in a wineglassful of cold water. It is agreeable to take.

Uses of a Common Paraffine Taper.—A common white paraffine taper makes one of the best bougies for exploring the nasal cavity. One of from one-eighth to one-sixth of an inch in diameter, and about ten inches in length, is made slightly soft by warming it in the hand, the end to be introduced into the nasal cavity is rounded off, the taper is bent into an easy curve and is ready for use. The perfect smoothness of the bougie thus formed, the ease with which it bends, and the just-sufficient strength given to it by the wick, are qualities which make this simple, inexpensive and always ready instrument very effective. To apply iodine evenly to the whole of the nasal cavity, it is merely necessary to paint the end of the taper, for a couple of inches, with iodized colloid, or with tincture of iodine, and then introduce it, to secure that all the iodine is left on the mucous lining of the nasal cavity. If the cotton within it be nicely teased out at one end of a short length, the cotton makes one of the most convenient of brushes for applying iodine or other solutions to the throat. As soon as one brush has been used, it can be cut off with the scissors, burnt, and another made.—*The Asclepaid.*

On Kola.—Dr. Monnet describes in the *Bulletin Gènerale de Thèrapeutique* a drug (sterculia acuminata) which he terms kola, but which has several synonyms applied to it. It is a native of Africa, and is found between the Sierra Leone and the Congo. The fruit contains five to fifteen seeds of the shape of a chestnut and variable in size, weighing sometimes from five to eighteen grammes. When opened, these seeds are seen to be divided into two halves of a white or rosy color. This substance is formed of cellules resembling closely the starch grains of the potato. The natives chew the seeds to relieve thirst, strengthen the gums and preserve the teeth (they contain a certain quantity of tannin). They are considered as stomachic, relieve hunger, act as sialogogues, etc. The natives regard them as a sacred medicine. To offer the white kolas to a friend is a high mark of esteem; to offer the red indicates antipathy. Solemn vows are made over the kola nuts.

Dr. Monnet has studied the physiological and therapeutical action of the drug at considerable length, and gives the following conclusions:

1. Kola, on account of the cafeine and the bromine which it contains, is a heart tonic, increasing its rapidity, exaggerating its dynamic force aud regulating its contractions.

2. In the second phase of its action, like digitalis, it is a regulator of the pulse. Under its influence the pulsations become more ample and less numerous.

3. As a corallary to its action on the blood tension, diuresis increases, and on this account, kola is useful in heart disease accompanied by dropsy.

4. It seems that kola, while acting energetically on the contractions of the heart and the contractility of the involuntary muscles, on the contrary paralyzes the voluntary muscles when used in toxic doses.

5. It diminishes the formation of the organic substances, such as urea, which results from the breaking of azotised substances, probably by exercising a special influence on the nervous system.

6. It is a powerful tonic, and is indicated in anæmias in dibilitating chronic affections, and in convalescence from severe diseases.

7. It assists digestion, either by increasing the secretion of the gastric juice, or by acting upon the muscular crats of the stomach, which it exerts a tonic effect upon in certain forms of dyspepsia. Under its influence rebellious anorexias disappear and the digestion is regulated.

8. Finally it is an excellent remedy for diarrhœa, and has proved very serviceable in chronic diarrhœa, and in certain cases of sporadic cholera, without our being able to explain its acting satisfactorily and physiologically.

MEDICINE.

PEMPHIGUS OF THE CONJUNCTIVA.—The *Practitioner* gives two instances of this rare disease. One, reported by Steffan, of Frankfort (*Klin. Monatsblätter*), a woman, aged 73, presented herself for treatment on account of an inflammation of the left eye. There was a moderate amount of conjunctival inflammation, with a peculiar cicatricial process running on in the inferior conjunctival sac. Some of the cilia of the lower lid were drawn inward, thereby irritating the cornea. With continuance of the inflammation the inferior conjunctival sac became shallower, finally disappearing in the outer third. The cause of this cicatricial process could not then be discovered. There was no evidence of granular conjunctivitis. The condition was evidently that described by Gräfe as *essential shrinkage of the conjunctiva*, and by Stellwag as *syndesmitis degenerativa*. The right eye then became inflamed, and the same cicatricial process began to develop in the inferior conjunctival sac. Finally scarce a trace of the sac remained, the lower lid being closely united to the ball. A month after the inception of the disease an eruption of typical pemphigus vesicles occurred, first on the left, then on the right eyelid. On the latter, during one and a half years' observation, the vesicles would come and go. There also occurred during this time an affection of the throat, which was diagnosed as pharyngeal pemphigus. Steffan draws the conclusion from his case that this confessedly obscure condition of conjunctival shrinkage is really the result of a pemphigus eruption, and that the proper name for the condition is pemphigus conjunctiva.

Schweigger (*Centralblatt für prackt. Augenheilkunde*) reports a case of the same kind. The patient was a sober old man. There was marked injection of the scleral conjunctiva of each eye, a partial shrinkage of the inferior palpebral conjunctiva, and disappearance of the inferior conjunctival sac while the upper lids were healthy. A few months later a pemphigus vesicle developed itself on the right scleral conjunctiva. For years previous similar vesicles had been observed on the mucous membrane of the mouth.

ERUPTION FOLLOWING THE USE OF ANTIPYRIN.—Dr. Paul Ernst (*Centralblatt für klinische Medicin, Practitioner*) reports two cases of an eruption caused by the internal administration of antipyrin. The two patients were a boy and a woman, aged respectively 10 and 67 years, yet the eruption was so nearly alike in both cases that there could be little doubt that the same cause was at work. The eruption consisted of little irregularly rounded pimples lying close together, and in some places confluent so as to form patches of greater or less extent, between which the skin was normal, thus giving a marbled appearance to the surface. After about five days the eruption began to fade and to assume the character of a brownish pigmentation, and in the old woman there were some faint evidences of desquamation. Traces of the eruption were still visible at the end of two weeks. The eruption was thickest over the body, and on the extremities the extensor surfaces were more covered than the flexor surfaces. In the boy there was some œdema of the face, but in neither case was there any eruption on the head or neck, although the palms of the hands and soles of the feet were not spared. There was some itching in the case of the woman, but the boy did not complain of this. The eruption ran its course and disappeared, although the administration of the antipyrin was not interrupted. The writer explains this by supposing that the system acquired a tolerance for the drug. On this account he advises a continuance of the remedy where its use is indicated, despite the eruption. In a postscript Dr. Ernst states that he has observed three other cases of an exactly similar nature.

THE TREATMENT OF SYCOSIS.—Dr. H. Von Hebra (*Wien mediz. Blatter. Practitioner*) recommends the modified Wilkinson's ointment as an excellent application in sycosis. The formula is—

℞ Sulphur sublimat .....
Ol. cadini āā..... ℥ iv.
Saponis mollis.....
Adipis āā..... ℥ j.
Cretæ preparatæ..... ℥ ijss.
M. Ft. unguent.

The hair on and around the affected part is cut short, and the scabs and crusts removed by the applition of any simple ointment. After twenty-four hours the affected part is scraped, shaved, and thoroughly brushed with the Wilkinson ointment. It is then covered with flannel, and a bandage applied. The dressing is changed daily, and the ointment washed off, and all the hairs which are surrounded by pustules are epilated, and the pus squeezed out. This is continued so long as pustules form, but even in obstinate cases this ceases in about ten to fourteen days. In slighter cases there are no pustules after the first few days. The part is then shaved only when necessary for the proper application of the ointment. The tender, scaling skin soon acquires, by the application of oxide-of-zinc ointment, prepared with vaseline, its usual smoothness and appearance.

TOBACCO SMOKE.—Dr. Zulinski has published, in a medical journal of Varsovia, the results of a long series of experiments undertaken by him on men and the lower animals, to verify the physiological effects of tobacco smoke. He considers (*Bulletin Médical du Nord*) that the smoke is energetic poison even in small doses. For men it is but slightly deleterious, when it is not inhaled in any great quantity, but it may readily become so when the smoker acquires the hrbit of *swallowing the smoke*, as it is commonly called. When deprived of its nicotine the smoke is still poisonous, but less so in degree. It contains a second toxic principle, *collidine*, an alkaloid, and, in addition, oxide of carbon and hydrocyanic acid. The effects produced by an abuse of tobacco depend to a large degree upon the nature of the tobacco and

the way it is used. Cigars are more toxic than cigarettes, cigarettes than the pipe, and the use of the narghile, or hubble-bubble, as it is sometimes called, by passing the smoke through water, reduces its toxic influence to the minimum. Generally speaking, the tobacco that is least colored is the mildest; but this is sometimes misleading, for a large varieties of tobaccos are bleached, to suit the taste of consumers, and bleached by the aid of chemical agents that are not always without danger. Many tobaccos of a pale color give a burning sensation with their smoke, on account of the large proportion of woody fibers which they contain. This is the case with the *Caporal*, as exported by the French, and also with the *Bird's-eye* tobacco, so popular with the English. These tobaccos frequently produce slight inflammations of the tongue, by their elevated temperature and the irritating nature of their smoker They should be specially avoided by smokers of advanced age, as being most liable to produce cancer of the tongue or lips. The black tobaccos are also often adulterated, but are, as a class, the least dangerous.

Trypsin as a Solvent of the Diphtheritic Membrane.—Dr. B. M. Van Syckel, of New York, recommends a trial of trypsin as a topical application in diphtheria. Trypsin is one of the ferments of the pancreatic juice. It will dissolve its own weight of fibrine in from five to ten minutes at a temperature of 37° Celsius (98.5° F.). It has been successfully employed as a solvent of the false membrane in diphtheria by Drs. J. Lewis Smith, of New York, and J. T. Keating, of Philadelphia, and at present several gentlemen are engaged in clinical experiments to determine its value for this purpose. Dr. Van Syckel has found that when the diphtheritic membrane, removed post-mortem, is immersed in a trypsin solution at a temperatue of 37° Celsius, "it becomes transparent and slightly swollen, then breaking into fragments it is slowly dissolved, with the exception of a small residue consisting of cells and possibly bacteria. This settles to the bottom of the glass, leaving the solution slightly turbid and mucilaginous. In cases where the membrane is still adherent to the surrounding tissue, the solvent action of the trypsin is slower, but no apparent change takes place in the healthy tissue." The solution is to be applied by means of the spray, applications being made every fifteen minutes if possible, or as often as the strength of the patient will permit, only a small amount of the liquid being used at each spraying. The importance of frequent applications should be impressed upon the parents or nurse, as upon this depends the success of the treatment. A leading pharmaceutical firm of this city is now employed in preparing a solution for use in diphtheria; but the writer states that the following extemporaneous preparation has been found very serviceable in his hands: 50 c.c. (℥j ℥vj) of a 1 to 1,000 solution of salicylic acid may be added to 5 grm. (℥j gr. xvij) of "extractum pancreatis," and the mixture allowed to digest in a water-bath at a temperature of 37° Celsius (98.5° F.) for four hours, then filtered and made slightly alkaline by the addition of bicarbonate of soda. The solution should be made only as required, as it will not keep more than one or two weeks.—*Medical Record*, Feb. 21, 1885.

SURGERY.

A Foreign Body in the Bladder.—Dr. Folet details (*Bulletin Médical du Nord*) the case of a man 40 years of age, a sailor, who, while suffering from dysuria, was induced by a friend to use urethral injections through a tube long enough to reach the bladder; it was of rubber, and, being connected with a large reservoir of warm water, the force of the jet detached it from its connection and it disappeared in the urethra. The frightened subject pulled on his penis and manipulated it in such a manner as to cause its total passage into the bladder. For the last four days he suffered from an incessant desire to urinate, painful urination and hematuria. Dr. Folet placed the patient on his back, introduced a lithotrite and attempted to seize the foreign body, but on account of the presence of the prostate, his instrument passed over the trigonum without touching it, and thus was prevented from reaching the *bas-fond* of the bladder, where lay the foreign body. He was enabled to satisfy himself that the tubing was in its superior portion against the posterior surface of the bladder, and placed his patient in such a position as that, resting on his shoulders and heels alone, the sacrum could be elevated by a large Greek dictionary, when, on introducing the lithotrite, a soft substance was seized between its blades which was movable and drawn out, proving to be the tube doubled up and covered with phosphatic incrustations. The operation lasted about two minutes. The tube was 29 centimetres long, and composed of two portions, of 5 and 7 millimetres diameter, respectively. One piece was partly within the other, but fortunately, the liquid and heat had so softened the rubber as to cause them to adhere firmly. The phosphatic carapace was quite thick and rigid. This foreign body had remained in the bladder eight days and produced an intense cystitis, which rapidly disappeared on its extraction.

Partial Amputation at the Ankle-joint.—Dr. Sklefassowsky has described in a Russian paper which has been translated and given in the *Revue de Chirurgie*, and a brief of which appears in the *Lancet*, an osteoplastic operation first devised and practiced by Dr. Wladimiroff, of Kazan. The operation consists in the removal of the posterior part of the foot and the ankle-joint, and the union of the anterior part of the foot to the leg, so that the foot is in a line with the leg, and the patient subsequently walks upon the heads of the metatarsal bones and the fully extended toes. The method of procedure is as follows: An incision is made straight across the sole, on a level with the middle of the scaphoid bone; on each side this incision is continued up to the malleolus, and then straight across the back of the ankle. The incisions are all carried down to the bone, and the ankle-joint is entered from behind and disarticulated. This done, the heel is seized, and the soft parts of the dorsum of the foot are carefully separated from the bones, care being taken not to expose or

injure the dorsal artery of the foot. The transverse tarsal joint is now to be opened and disarticulated, and the oscalcis and astragalus removed. The articular surfaces of the cuboid and scalphoid, and the lower ends of the tibia and fibula, are to be sawn off, and the foot is then to be applied to the end of the leg, and first the bones, then the soft parts, united with sutures.

The advantages claimed for this operation are that, while permitting the removal of diseased parts, it preserves healthy structures, and is not such a mutilation as is a Syme's or Pirogoff's amputation or an amputation through the lower third of the leg. The result is stated not to be a great deformity; the line of the limb is preserved, and the foot forms an excellent basis of support. The cases for which it is suitable are intractable ulcers of the heel, disease of the tarsus, limited to the os calcis and astragalus, and new growths, similarly limited. Sklefassowsky performed the operation for a very chronic ulcer of the heel, which had resisted all treatment for nine years, and which invalided and crippled an otherwise robust man. Pirogoff's amputation is usually rejected for cases of strumous disease of the ankle or posterior tarsus, on account of the liability to recurrence of the disease in the stump, and, at first sight, it might appear that Wladimiroff's operation lies open to the same objection. But the cases are not quite parallel. In Pirogoff's amputation, part of the os calcis is preserved, and this very bone may have been involved in the primary disease. In the latter operation the os calcis and astragalus are completely and wholly removed; these are the bones which are the most frequent seats of strumous and tubercular disease, and it is a common occurrence to see chronic destructive changes in them, or involving the ankle-joint, which disables, but do not otherwise injure the anterior part of the foot. Sklefassowsky's patient had shortening to the extent of one centimetre only.

A NEW METHOD OF STRAPPING THE TESTICLE.—Dr. Wm. Barton Hopkins, of Philadelphia, says, in an article on this subject in the *Philadelphia Medical Times*, of February 7: Strapping swelled testicle in the ordinary way, with adhesive plaster, is effective only so long as the yielding quality of the tissues of the organ is acted upon by the pressure with which the plaster is first applied, there being no elasticity in the muslin. The dressing must be frequently renewed, therefore, in order to follow up the rapidly-subsiding swelling. I have found that india-rubber prepared and applied in the following manner obviates this necessity, requiring renewal not more than once in four or five days, besides making much more persistent pressure than can be obtained by adhesive plaster. The advantages it possesses over the other forms of elastic pressure which have been employed, as the rubber bandage and the compressing-bag, are the perfect uniformity of pressure which can be exerted upon the entire organ, and the readiness with which it may be adapted to any case.

Two adhesive strips three-quarters of an inch in width are first made to encircle the scrotum at the upper portion of the testicle, in order to hold the latter well down in the bottom of the scrotal sac, as in the ordinary method, and to form an unyielding base of support for the elastic pressure to act upon. I originally used rubber for this, but found that the succeeding strips of rubber forced the organ partially through the encircling band thus formed, caused the material to become plicated, and thereby gave rise to pain. The testicle being thus fixed, four bands of rubber are applied. These are made of "bandage-gum" cut into strips of the required length, an inch and a quarter wide, and retained with "rubber cement." A few drops of the cement are rapidly and thinly spread uyon a strip with a spatula, and a few drops more upon the adhesive plaster and skin of the scrotum. These surfaces are allowed to dry, care being taken that the rubber meanwhile does not curl up on itself and stick fast. One extremity of the strip is then placed upon the adhesive plaster posteriorly, carried forward beneath the testicle, and fixed in front. Another is applied in like manner laterally, and two more obliquely, four being usully sufficient to cover in the organ.

As with india-rubber used elsewhere for a permanent dressing to induce pressure, great caution must be exercised not to constrict the parts too firmly: about four ounces traction on each strip when the dressing is completed being sufficient to aggregate maximum pressure likely to be required.

COCAINE IN URETHROTOMY.—Mr. W. J. Gleeson reports the following case which came under the care of Dr. G. M. Garland, at the Carney Hospital:

Patient, aged 58, contracted gonorrhœa twelve years ago which resulted in gleet, the latter persisting ever since. During the last three or four years he has had scalding, increasing difficulty in micturition and some urethral hæmorrhage, though the latter had been very slight and not at all constant. On examination, No. 12 French acorn bougie passed with difficulty through the anterior portion of the penile urethra, and on withdrawal was followed by a little blood. Seven distinct hitches of the instrument within three inches of the meatus could be readily counted.

At 9:56 A.M. forty minims of a 4 per cent. solution of chloride of cocaine were injected into the urethra and retained four minutes by pinching the meatus. At 10:07, the operation by the Otis method was begun and lasted twenty minutes.

The patient lay perfectly quiet, and only winced once or twice during the repeated cuttings. He expressed himself as delighted with the effect of cocaine. After the divisions of the strictures up to 33 French, a No. 28 steel sound was passed into the bladder, the patient declaring that he scarcely felt it at all. Seven hours later he passed his water, and remarked that the pain attending this act was greater than that of the operation itself.

As showing the previous irritability of the urethra, it may be said that the single introduction of a sound by Dr. Garland at his first examination of the case caused far greater immediate and subsequent suffering than did the operation itself.—*Boston Medical and Surgical Journal, Feb. 5, 1885.*

THE

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THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.—FINANCIAL PROGRESS.

The annual reports of the treasurer of the American Medical Association for the six years previous to the establishment of the JOURNAL show an average annual income of $5,008, the highest amount for any one year being $7,409.89 and the lowest $3,304. According to the same officer's report at the annual meeting in Washington, May, 1884, the amount was $13,017.25, which includes the membership dues for 1883 and the receipts on subscriptions and advertising during the first three-quarters of the first JOURNAL year. According to the Editors' report to the Board of Trustees, presented at the same meeting of the Association, there remained due and uncollected from advertisers and subscribers an aggregate of $5,100, which, if paid during the last quarter of the JOURNAL year, would make the total receipts for the first JOURNAL year $18,117.25. On the supposition that these assets would be paid, and estimating the current annual expenses of the Association, aside from the publication of the JOURNAL to be only $1,000, it was predicted that the total income for that year would meet all actual expenses and leave a small balance in the treasury. On the 25th of the following September, three months after the close of the first year of the JOURNAL publication, the Editor made a full report of the receipts on account of the above named assets up to that date, which amounted to $2,804.34. From the 25th of September to the 1st of March, 1885, there had been collected from the same assets belonging to the first year the further sum of $550, making the total collected from this source since the report at the meeting in Washington $3,354.34. This makes the total actual receipts to March 1, 1885, belonging to the first year of publication of the JOURNAL $16,371.59. This still leaves uncollected assets amounting to about $1,500, chiefly due from subscribers who signed the original pledges of support and have received the JOURNAL regularly, and from whom payments are still being received sufficient to indicate that the ultimate loss will be small. On the 25th of September the Editor, in addition to a full report of the receipts on account of the JOURNAL to that date, also reported the total expenditures on account of the first year of the publication of the JOURNAL, which were as follows: For publication expenses proper, including paper, printing, mailing, postage, expressage, and clerk hire, a total for the year of $11,078.68; for the editorial work a total of $3,067.12; making the total amount drawn from the treasury on account of the publication of the JOURNAL for the first year, ending June 30, 1884, $14,145.80.

According to the treasurer's report, the actual current expenses of the association for the fiscal year of 1883-4, unconnected with the publication of the JOURNAL, were $2,148.66, which makes the total expenditures for all purposes belonging to that year, $16,294.46. This is $77.13 less than the gross actual receipts for the same year as above stated, on March 1, 1885. The Editor accompanied his full report of receipts and expenditures made September 25, 1885, to the Board of Trustees, by a receipt for payment in full of all claims, both for the publishing and editing of the JOURNAL, for the first year ending June 30, 1884.

In regard to the income of the association for the present fiscal year, which corresponds with the second year of the publication of the JOURNAL, we can give exact information only so far as relates to the receipts at the office of publication, which are derived from advertisements and subscribers who are not members of the Association. Members either pay their dues at the annual meetings of the Association or remit them directly to the treasurer in the interim. The total receipts at the office of publication from subscriptions and advertisements belonging to the second yond year of the JOURNAL, up to March 1, 1885, amount to $2,112.03. The additional receipts during the present month will increase the amount to $3,000.

There will then remain for collection belonging to this year the third and fourth quarters of advertising, and at least three or four hundred subscriptions, which, together, should net from $3,500 to $4,000 more,

making the total receipts at the office of publication for the second year not less than $6,000.

In the first article on the progress of the JOURNAL, March 7th, it was stated that the whole number of members of the association receiving the JOURNAL was 3,033. As the names of all these have been furnished directly by the treasurer since the publication of the JOURNAL was commenced, it is fair to assume that they either have already or will pay their membership dues to the treasurer for the current year. If such should be the case it would add over $15,000 to the income for the year, and make the total from all sources, in round numbers, $21,000, being an increase of about $5,000 over the receipts of the preceding year.

The increase in advertising patronage and the increased number of copies issued each week, will probably make the total publication expenses for this JOURNAL year nearly $12,500.

The amount expended for assistant editorial work, in the form of editorial articles, foreign and domestic correspondence, reporting important medical society proceedings, clinical lectures, etc., will be double that expended for the same work the previous year. Consequently, the total amount required for the editorial department this year will not be less than $4,500.

This would make the total amount drawn from the treasury, on account of the second year of publication of the JOURNAL, $17,000. If we allow $2,000 for the current annual expenses of the association not connected with the JOURNAL, there will be left a surplus of receipts over expenditures of about $2,000. If there proves to be any material failure in the realization of the results here indicated, it will be owing mainly to the fact that some portion of the 3,033 members who are receiving the JOURNAL fail to pay their annual dues to the treasurer.

In our next issue we shall state some of the most important sources of embarrassment encountered, thus far, in the management of the JOURNAL, with such suggestions in regard to the future as we deem important.

AUSCULTATION OF THE ŒSOPHAGUS.

This mode of physical examination is so little known, that a few facts concerning it may not be superfluous. It consists in auscultation with the ear, or preferably with the stethoscope, at various points along the tract of the gullet, while the patient is in the act of swallowing some liquid. The instrument is first placed over the pharynx, upon the side of the neck, at the level of the hyoid bone, after which it is moved from point to point down the back, immediately to the left of the spinal column, as far as the eighth dorsal vertebra. Hamburger originated this method, and published his observations and conclusions in the *Œsterrich. med. Jahrb.*, 1867, 1868, 1869, and in 1871, in a monograph entitled *Klinik der Œsophagus-Krankheiten.* Other investigators followed in his track, and recorded their researches as follows:

Morell Mackenzie, *Clinical Lecture on Diseases of the Œsophagus, with Special Reference to Œsophageal Auscultation. Lancet*, May 30, 1874.—Clifford F. Allbutt, *On Auscultation of the Œsophagus. British Medical Journal*, October 2, 1875, page 420.—Elsberg, *Auscultation of the Œsophagus.* Philadelphia, 1875.—Zenker, Ziemssen's *Cyclopædia of the Practice of Medicine*, Vol. VIII, pages 12–14.—Gaston Sainte-Marie, *Des Différentes Modes d'Exploration de l'Œsophage*, Paris, 1875.

With an originator's enthusiasm, Hamburger made some statements of an astounding character and interpretations of sounds, which, to employ Dr. Mackenzie's words, "are refinements which it is difficult to arrive at."

In the main, however, his conclusions have been confirmed, and the value of the method demonstrated. This field bids fair to reward the patient worker with results at present scarcely dreamed of. It has been established beyond doubt that diseases affecting either the caliber or normal structure of the œsophagus modify the sounds produced by the act of deglutition. In order to be able to recognize and interpret abnormal sounds within the gullet, one must have an accurate knowledge of normal sounds and expend much patient labor in investigation, with ample clinical material. If the stethoscope be placed upon the neck close beside the hyoid bone, and the individual be directed to swallow some liquid, a loud gurgling sound will be perceived by the experimenter. This sound is supposed to be due to the admixture of air in the pharynx with the material ingested. Over the course of the œsophagus a somewhat different sound is heard, which is indescribable, but gives the impression of a smooth body passing swiftly and easily downward and distending the tube in its passage. Hamburger describes it as suggestive of an egg-shaped body about an inch in length, with the less pointed extremity below. He furthermore asserts that the practiced ear is able to detect various modifications of this body in both size and shape, but, as Mackenzie so delicately insinuates, such nice distinctions are fanciful. A powerful imagination may give form to the normal œsophageal sound, but the mind of the ordinary auscultator will receive no other

impression than that of a sound of certain duration and quality, and it is from modifications of these that he will have to draw conclusions as to the condition of the tube. As already stated, the normal sound of deglutition cannot be described, and hence an accurate knowledge of it can only be acquired by practice upon a healthy individual. It is a peculiar short gurgle, somewhat resembling a cluck (German "*Glucksen*"), and varies somewhat according to the nature of the substance swallowed, whether it be a dry solid or a liquid, and whether the liquid be water or of considerable consistency, as gruel. Hamburger regarded the sound as produced by the compression of the morsel of food by the walls of the gullet and the consequent admixture of the air contained within the *ingesta* with the solid constituents; Sainte-Marie, as due to the sudden separation in front of the descending substance, of the mucous membranes, of the œsophagus, which were previously in contact; while in *Ziemssen's Cyclopædia* it is ascribed to friction. It is not unlikely that all these factors combine in its causation. The rapidity of the descent of the morsel in a healthy tube is so great that, if the hyoid bone be grasped while at the same time auscultation be made over the upper part of the œsophagus, the characteristic sound will reach the ear with scarcely an appreciable interval after the movement of the bone. In the case of dry solids, however, the act of swallowing becomes perceptibly delayed. With such facts as these in mind, and with a knowledge of the normal sound, the clinician is able to recognize any modification of it, and by the aid of œsophageal sounding together with the history of symptoms, draw important deductions as to the diseased condition. We quote from *Ziemssen's Cyclopædia*:

"The variations from the normal, which may be observed in disease, and which at times are of importance in diagnosis, are the following: total absence or great weakness of the sound; sudden cessation of the same at a given spot; clucking, gurgling or rubbing sounds ('glouglou,' 'gargouillement,' 'frou-frou' of the French), of shorter or longer duration; further, diminution and rapidity of the vanishing of the sound, and, finally, the sound passing upward or laterally instead of downward."

In order to locate the portion of the gullet affected, one must know the divisions which are made of the œsophagus. According to Mackenzie, they are as follows: The pharynx extends from the "inferior curved line of the occipital bone, five-eighths of an inch below the occipital protuberance," to the level of the fifth cervical vertebra; the upper third of the œsophagus, from this point to the second dorsal vertebra; the middle third, from the second dorsal to the sixth; and the inferior third from the sixth to the ninth dorsal vertebra.

One occasionally observes in our medical journals reports of researches in œsophageal auscultation by foreign investigators which show this field of physical diagnosis is considered fruitful. We trust, however, that it will not be relegated entirely to our transatlantic brethren.

THE ANTISEPTIC ACTION OF THE BILIARY PRINCIPLES.

So long ago as 1843 Chiapelli published the results of some experiments which showed that the bile was endowed with the property of resisting the decomposition of alimentary materials in the intestines. He admitted that some only of the components of bile were instrumental in producing this effect; that others were altered by the decomposition of the albuminoid and starchy matters. It will be remembered also, that in 1846 Gorup-Besanez affirmed that the bile, or at least the biliary salts, exert an antiseptic action on the albuminoid alimentary substances; and Saunders, Leuret, Lassaigne and Eberle have attributed to the bile the role of retarding the decomposition of alimentary substances in the intestines. This opinion doubtless owes its origin to the discovery, in bile submitted to analysis, of products which are believed to be of a balsamic nature.

PROFESSOR G. BUFALINI, in an article on this subject in the *Archives Italiennes de Biologie*, August, 1884, reports some experiments made by him, with the assistance of Prof. Giannuzzi, in 1875 (*Dell' Azione del Lievito di Birra sulla Bile e sopra altri Liquidi animali*). The results of these experiments, which are probably but little known, were: 1. At a temperature of about 40° C., and even less, bile in contact with beer-yeast underwent putrid decomposition with the development of gas, constituted for the most part of carbonic anhydride and an inflammable gas. 2. The bile contained a large quantity of mucous, which was easily decomposed in the presence of beer-yeast. 3. Solutions of the biliary salts, made from crystallized bile, only in rare cases produced a small quantity of carbonic anhydride when brought in contact with beer-yeast. 4. Beer-yeast, during a time of twenty-four hours and at a temperature of 40° C., had no action on gastric juice and on the peptone dissolved in it. 5. It did act on the mucus, by giving rise to a certain quantity of gas. 6. Gastric juice with peptones may retard and even prevent the decomposition of bile mixed with beer-

yeast. 7. Bile, such as is poured into the duodenum, has not the power of preventing the decomposition of the alimentary substances contained in the intestines, as is believed by physiologists; on the contrary, it is one of the animal liquids which is decomposed with great facility. 8. Beer-yeast has the same action on blood serum as on bile.

These experiments, however, were by no means conclusive as to the anti-putrescent properties of bile; for it is well known that it undergoes important modifications in the intestines; its acids are set free and resolved into their components. It is extremely probable that these derivatives have a different action. Bufalini therefore undertook a second series of experiments in 1876, under the advice of Albertoni. In the previous year Maly and Emich had published some experiments which showed that 0,5 per cent. of taurocholic acid stopped amygdalic fermentation, even after two hours; 1 per cent. of glycocholic acid had no effect; 1 per cent., and even 0,75 per cent. of taurocholic acid prevented the development of bacteria in milk, while glycocholic acid only had a very slight effect. It seemed, then, that taurocolic acid was very much more antiseptic than glychocolic acid.

The experiments performed by Bufalini were very extensive and varied, embracing the action of pure taurine, taurocholic, glychocolic and cholalic acids on the bile and the biliary salts. They showed that while the bile in nature may easily putrify, several of its components are, on the contrary, capable of retarding, to different degrees, the processes of fermentation and putrefaction. As regards the normal physiological processes, this fact is very important, since it is known that the bile undergoes metamorphoses in the intestines. The biliary acids, taurocholic, glychocolic, and cholalic, have undoubted antiputrescent properties, in the order in which they are named. Emich had already established the fact concerning taurocholic acid; but it is much more important as regards cholalic acid, which is the biliary acid found in the fæces. It is established that it is found in the large intestine, and it is probable that it here exerts its action. Taurine, which is found in the intestine, is also capable of retarding the processes of putrefaction.

It was shown by Albertoni, in 1873, what was previously suspected by Spallanzani, that the gastric juice owes its antiputrescent properties to hydrochloric acid, and that all the acids have this property to a different degree. Bufalini shows that hydrochloric acid is somewhat superior to cholalic acid in this respect. He also found, as was affirmed by Chiapelli, in the memoir referred to, that the bile is capable of absorbing the intestinal gases, and thus preventing meteorism, which suggests that some preparation of biliary salts or acids may be of service in preventing the meteorism of enteric fever; though a solution of sodium hydrate absorbed more sulphuretted hydrogen than beef-bile of the same degree of alkalinity.

PUBLIC HEALTH AND THE NEWSPAPERS.

There is reason to hope that the time will come (and before the millenium) when laymen will take as much interest in, and have as much knowledge of sanitary matters as medical men. As every one must see, this will depend to a great extent upon the interest shown in these matters by the newspapers, which, when intelligently edited and conducted, are the great teachers of the people, even though the great majority of people who read them do so with no idea of being taught.

"Was it cholera?" is the subject of an editorial note in the *Chicago Morning News* of March 17, which says: "It is not certain that the bark Adolph Olrig has brought the germs of cholera from Calcutta to New York. The health officer finds no contagious sickness now on board, although four of the crew died of the cholera, or a disease closely resembling it, when the ship was but a few days out. The Adolph Olrig is now at anchor in New York harbor, and within a few days her crew and cargo will be on shore. The only safe view to take of this case, and of many others which will very soon follow, is that they *do* bear the germs of cholera. Accepting this as the plausible theory, the health officers should use every possible means to kill the germs. As for our own health department, is it out of order to suggest that within ninety days from now the pestilence will probably have a foothold in this country, in which case we may be sure that it will not overlook Chicago? Clean the city."

Such articles as the above will do more toward bringing sanitary matters before the public, to whom they are of most benefit, than a great many learned discussions in the medical journals. The people do not read the medical journals, and they do read the newspapers.

CORONORS' NEGLECT.

Two cases have occurred during the past week in which coronors and the coronors' juries have been guilty of gross neglect of duty. The first case was that in which a coronor was called to determine the cause of death of two persons who had come to their death in a sudden and unknown manner. In both

of these cases there was reason to suspect that the persons had died of poisoning by morphine, and that one had taken a much larger quantity than the other. In the case of the first the intelligent jury found that the person had come to his death from causes unknown to the jury; no autopsy was made, and the person was buried. In the second case the finding was that death was caused by morphine, but no autopsy was made.

The second case to which we refer is that of the young woman who was recently found dead in the Lake at Pullman, Ill. No one knows how or why she died; an inquest was held (for form, we suppose), but it was so loosely conducted that the coroner and his jury may as well have sat in South Africa. We are pleased to see that the daily papers are commenting on the neglect in this case. The *Chicago Morning News*, of March 17, says, editorially: "What adds to the singularity of the case is that no thorough examination of the body was made by competent medical men. Inasmuch as the sole office of a coronor's jury is to determine whether death is accidental, suicidal, by violence, or from natural causes, the neglect to use the only possible means of arriving at a plausible conjecture in the present case reflects rather severely on the coronor and his deputy. A careful *post-mortem* should have been held."

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, February 20, 1885.

THE PRESIDENT, H. P. MERRIMAN, M.D., IN THE CHAIR.

DR. CHRISTIAN FENGER, presented the following report of his anatomical investigation into Professor W. H. Byford's

TWO CASES OF MURAL PREGNANCY.

Reported in the Chicago Med. Jour. and Exam., Jan. 1885:

The exact anatomical diagnosis, or minute classification of an extrauterine pregnancy is easy enough in the early stages of the disease, but becomes more and more difficult in the latter half and toward the termination of the pregnancy. In the early months it is only by accident that a pathological specimen is found. Here the exact diagnosis is easy enough. In the third to sixth month, the hemorrhage from rupture causes some specimens to come forth—by death or operation—and here the diagnosis is comparatively easy. In the latter half, from sixth to tenth month, the diagnosis, viz., exact location of fecundated ovum, becomes often extremely difficult, next to impossible, on account of secondary changes after partial destruction of fallopian tubes and ovaries, and still further difficult, if a fatal peritonitis has contributed to mask the normal anatomical features of the organs in question.

The two specimens sent to me for examination belong to the class of late, consequently difficult, cases, and in one of them decomposition was advanced. Nevertheless, I think that a close examination of the specimens permits of a comparatively exact classification of the two cases in question. Before describing and demonstrating the specimens, permit me to recall to your memories the different forms of extrauterine pregnancy.

Extrauterine Pregnancy.—The ovum is arrested somewhere in its normal passage from Graafian follicle down to the *cavum uteri*, or drops out of the passage, without or after rupture of the latter, into adjoining cavities or spaces.

1. *Ovarian Pregnancy.*—The ovum remains in the ovary. Epiovarian pregnancy,—the ovum develops upon the ovary, having left the Graafian follicle.

2. *Abdominal (or peritoneal) Pregnancy.* — The ovum drops down into the peritoneal cavity, and does not reach the Fallopian tube at all.

3. *Tubal Pregnancy.*

I. Tubo-abdominal, or Tubo-ovarian Pregnancy.

II. Tubal pregnancy (proper).

III. Tubo-uterine, or interstitial, or mural pregnancy. Extra-peritoneal pregnancy (in the broad ligament, after rupture of the fallopian tube.)

4. *Pregnancy in one side of a uterus bicornis.*

5. *Secondary abdominal or peritoneal pregnancy.* Ovary, tube, or even uterus (normal or *bicornis*), is ruptured, the fœtus slips into the peritoneal cavity, but remains in connection with the primary sac.

I shall first describe and demonstrate Dr. Byford's case, No. 2: The uterus is large, four and a-half inches long, three inches broad at the fundus, the cavity also considerably enlarged. In left side of uterus and vagina, I find an incision opening, three and a-half inches long, united with silk sutures, leading from the uterus and vagina into the sac, or, as certain members of the society called it, the adventitious uterus. The sac can only be seen in fragments. Its wall is one to two lines thick, the outside partly covered with peritoneum, partly adherent to surrounding organs, viz., bladder, uterus, omentum. The rectum I do not find. Right ovary and fallopian tube are missing. The left fallopian tube shows the following conditions: The uterine portion of the tube is of normal size, passable only for a thin probe, .0005 mm. in diameter; at the distance of one-half inch from the fundus it is wider, one-eighth of an inch in diameter, and so it continues for four inches; then it suddenly dilates to one inch in diameter, continues so for one inch, and thereafter opens into the fœtal sac, the wall of the latter going continuously over into the wall of the tube. The left ovary cannot be found. Large shreds of the sac of the ovum, viz., amnion, chorion, adhere to the sac here and there. Inside of sac is of dark brown color, spotted, the color of decomposed blood. This condition is most pronounced in part of the sac that covers the posterior wall of the bladder and the anterior and posterior wall of the uterus. On the

uterus the sac is thinner and more adherent (no subserous connective tissue), than on the bladder, where the wall of the sac is about 2 mm., firm and movable against the bladder.

From the condition in which we find the left fallopian tube, I think it safe to conclude that the ovum has developed in its outer half, near the abdominal end of the tube. The funnel-shaped dilation of the tube in this place, and the thickening of its wall, which uninterruptedly continues as the wall of the fœtal sac proves the connection between the two cavities, and this case of extrauterine pregnancy would thus be of the *tubo-abdominal variety*. I believe that the ovum has commenced its development in the tube, and then, with or without rupture of the latter, has formed its sac on the surface of the pelvic and surrounding abdominal organs. In that respect it might be classified as a secondary abdominal or peritoneal pregnancy, originating in the abdominal end of the tube.

Dr. Byford's Case, No. 1.—This case has a greater interest, partly because the specimen is in a good state of preservation, and partly because some of its features are seemingly pointing to another of the varieties of abdominal pregnancy. In this case it will be remembered, laparotomy was performed, part of the cyst and the upper two-thirds of the uterus were removed. The child I shall not undertake to describe here, as it is irrelevant to the matter in question. We find the uterine appendices of the right side, viz., broad ligament, round ligament, fallopian tube and ovary normal.

The uterus, amputated about the middle of the neck, is of normal size, viz., the cavity, one and one-fourth inches between the two uterine orifices of the fallopian tubes; further down, one inch broad; still further down, one-half inch broad; and in the neck, one-quarter inch broad. The average thickness of uterine wall, three-fourths to one-half inch. To the left and behind the uterus, and in uninterrupted connection with the surface of the uterus, is the sac or adventitious uterus. From anterior surface of the sac, one-quarter inch from the left corner of fundus, is the left round ligament; it is enlarged, one-quarter inch in diameter. On upper surface of sac, behind and to the left of the *fundus uteri*, is a pocket covered with peritoneum, two and one-half inches broad, three to three and one-half inches deep. The upper free border of the pocket, or broad ligament, forms a somewhat thickened ridge, which runs in an arch just to the left, backwards, then to the right, then divides into two branches, a lower one that runs around and to the right, an upper one that runs forwards to the left, pointing toward the left corner of the uterus. The ridge contains the following structures: Left fallopian tube: the tube is seven inches long, the same as the right tube. It runs to the left backwards, in an arch, and then bends to the right downward and backwards; here it leaves the broad ligament, and the canal enters the wall of the sac. How it terminates, if on the inside of the posterior wall or not, cannot be made out for certain, because the sac is cut off here; but there are no fimbriæ, and it does not appear outside of the sac, and has undoubtedly opened into the fœtal cavity; the uterine portion of the tube is of normal size, permitting the passage of a very fine probe only; the median portion of the tube is normal, perhaps slightly dilated, three to five lines, six to ten mm. wide. The termination of the tube in the wall of the sac is an oval opening, one-quarter inch in diameter, the borders of which are perfectly smooth, no fimbriæ anywhere visible. Of the left ovary, no trace can be found. The sac is, on the outside, clad with the peritoneum and smooth; the wall of the sac is from one to four to eight mm. thick, white and firm; the thickest part of the sac is, right behind the fundus of the uterus, one-quarter to one-half inch thick, and there the tissue, viz., fibres of the uterine tissue of upper surface of fundus, is continuous with the wall of the sac; (however, on the posterior surface of neck and fundus, the tissue of uterus is *not* continuous with the sac, but the latter is separated from the uterus by a short layer of connective tissue, that permits of dissection and leaves the posterior surface of uterus and wall of sac with smooth areas); this is the place where the placenta was situated. The inner surface of the sac has an uneven, ragged or velvety appearance; most ragged over the placental site, close to and behind the neck of the uterus. Outside of this place there are numerous islands of ragged, uneven appearance, with more smooth parts between them. Several large vessels, one-quarter inch in diameter, partly free, partly adherent, are found on the inside of the sac.

A microscopical examination of the wall of the sac shows the following:

(*a*) In the placental site: (1) An inner layer of free cotyledons or fimbriæ; (2) a layer of maternal tissue, with crosscut of the cotyledons; (3) a heavy layer of connective tissue bundles, interspersed with some organic muscle bundles; (4) peritoneum.

(*b*) A portion of the wall near the peripheral opening of the fallopian tube into the sac, which I examined for ovarian tissue, presents exactly the same appearances as (*a*).

(*c*) A thick part of the sac, some distance from the placental site and tube, gives the following: (1) An inner layer of areolated connective tissue without cotyledons; (2) a median heavy layer of connective tissue bundles and bundles of organic muscle fibres; (3) peritoneum.

(*a*) A thin floor of sac presents the same layers as (*c*.) Nowhere is any trace of ovarian tissue to be found in the walls of the sac.

In considering the anatomical diagnosis of the case, I shall have to take into consideration mural, ovarian and tubo-abdominal pregnancy.

Can it be a mural or interstitial pregnancy? The continuity of the sac, in the placental site, with the upper surface of the fundus, belongs to the signs of mural pregnancy.

The uterine portion of the fallopian tube is of normal length and width. Consequently the fecundated ovum could not have lodged and developed here. However, a persisting "Gärtner's duct" might, perhaps, form a lateral branch of the tube, branching off and running in the wall of the uterus. And Baude-

struction of fallopian tubes and ovaries, and still further and posterior wall of the uterus. On the

locque, the nephew, pretends that a mural pregnancy can take place when the fecundated ovum lodges in this blind duct. Kleinwächter, in his article, "Tubal Pregnancy," in Eulenberg's Encyclopedia, remarks that the statement of Baudelocque has yet to be proved. But supposing a mural pregnancy had taken place here, and consequently the uterine portion of the tube could be found open outside of the sac, then we demand in this case certain characters that cannot very well be dispensed with, and these are the following:

The abdominal end of the tube, together with the ovary, must be found on the outer wall of the sac somewhere, and opening into the peritoneal cavity. Supposing that the ovary, for some reason, was not found and the peripheral end of the tube was obliterated and buried in the wall of the sac, we might yet have had a mural pregnancy. In this case, however, the tube opens into the wall of the sac; if it has opened into the fœtal cavity, it cannot be seen on the specimen (however, it looks as if it had done so).

The next question, then, is, Is it a tubo-ovarian, tubo-abdominal, or ovarian pregnancy? If an ovarian pregnancy, we require (1) that the tube does not participate in the formation of the sac (Kleinwächter); (2) ovarian tissue is found in the wall of the sac; (3) there is a connection between the sac and the uterus through the *ligamentum ovarii*. The round ligament, in mural pregnancy, is expected to be pushed outwards away from the side of the uterus. This might be different if the ovum could develop in the posterior wall of the uterus, but this possibility has never been proved. Gärtner's duct runs, not in the posterior wall, but from the parovarium, first in the broad ligament (in the same fold as the tube), then in the muscular substance of the lateral border of the uterus, and down on the side of the vagina, where it terminates blindly. The sac can be dissected off from posterior wall of neck and *fundus uteri*, which speaks for the development on the posterior surface of, and not in, the posterior wall of the uterus. Thus, although the positive proof against mural pregnancy, viz., the opening of the tube into the fœtal cavity, is wanting (the fault of the specimen), as all the signs of mural pregnancy, except the apparent continuity of sac and uterus, are absent, I shall declare against mural pregnancy.

Of a tubo-ovarian pregnancy we would require (1) that the peritoneal end of the tube participates in the formation of the sac—that is, opens into the sac; (2) the ovary may be intact, but it may also have been used up in the formation of the sac, and have disappeared either entirely or only remnants found in the wall of the sac. It is easy to see how difficult it might be to find microscopic remnants of ovarian tissue in the wall of a sac, one hundred times or more the size of a normal ovary. As near as we, in my opinion, are able to come to an exact diagnosis in this case, I should pronounce it a tubo-ovarian pregnancy. The exact location of the spot where the fecundated ovum has commenced development, it is, of course, impossible to prove to satisfaction. Still, there is one interesting feature in this case, which, in my opinion, throws some light on this point. This is the pocket, the blind pocket on the upper wall of the sac, behind the uterus. As before stated, the upper ridge of the posterior wall of the pocket, viz., the *ligamentum latum*, or the Fallopian fold of the ligament, forms a circular figure commencing at the left border of the fundus and terminating at about the same point; from the junction between the middle and outer third a branch goes off downward and to the right. The tube is contained in the first two-thirds of the ridge and in the branch.

The final third of the ridge that does not contain the tube, but runs back toward the left corner of the uterus would, in my opinion, correspond with the *ligamentum ovarii*. The formation of the pocket, clad with the peritoneum and having as upper border the above described ridge, can, in my opinion, be explained if the ovum has been arrested and commenced development in the *ligamentum infundibulo ovarianum* (Heale) between the fimbria that line the sulcus leading from the distal end of the ovary to the *ostium abdominale* of the tube. If the ovum be developed here, it can (1), with the vessels of the chorion, reach the abdominal ostium of the tube, and thus permit the tube to open into the sac; (2) it may reach down on the lower or posterior surface of the ovary, and thus during its growth lift up the ovary at the same time as it destroys it, but in lifting it up preserve and enlarge the peritoneal fold or pocket that is normally existing between the posterior surface of the peritoneal fold, containing the tube and the anterior surface of the peritoneal fold, containing the ovary and *ligamentum ovarii*. In case the fecundated ovum, from the ruptured Graafian follicle, had dropped down below the ovary, and had been arrested, or had taken hold on the peritoneal surface of Douglas's fossa or on posterior surface of ovary, if a development in such a way and place is possible, the pocket could be formed of course, but we could not expect to have the tube run into or open into the wall of the extra-uterine sac. If the pocket in question is formed in cases where the ovum has been arrested in the peripheral end of the tube, I do not know.

Dr. W. W. Jaggard presented for Dr. E. C. Dudley an

INTRA-MURAL LEIO-MYOMA OF THE UTERUS.

The fundus was more particularly involved; the cavity of the uterus but was slightly enlarged, and the *endometrium* was normal. The tumor weighed about fifteen pounds. Both tubes and ovaries were removed with the uterus. The ovaries had undergone extensive cystic degeneration.

The tumor was removed by abdominal section in the median line with supravaginal amputation of the vaginal portion of the uterus, both ovaries and tubes, on Friday, 20th February, in Mercy Hospital. The pedicle was surrounded by écraseur and rubber ligature before amputation; subsequently the pedicle was secured in Dawson's clamp, and treated after the extra-peritoneal method. The peritoneum was carefully stitched around the lower angle of the incision and parietal-peritoneum was in this manner united to visceral peritoneum.

(To be continued.)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, March 5, 1885.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

DR. WM. GOODELL read a paper entitled,

A YEAR'S WORK IN LAPAROTOMY.

During the past year he had had thirty-two laparotomies. Of these twenty-two were ovariotomies, eight öophorectomies, one hysterectomy and one exploratory incision.

Of the twenty-two ovariotomies ten were performed in the hospital of the University of Pennsylvania, with three deaths; seven at his private hospital, with one death. In eleven, both ovaries were removed. Seventeen had adhesions, which in seven were very formidable. Four of the women were over 60 years of age, and of these one died. In not a single instance did he refuse to operate, although three of his patients were very ill at the time of the operation.

The causes of death were as follows: An old lady, aged 63, from whom a tumor weighing sixty-five pounds was removed at the hospital of the university, died suddenly from acute uræmia, after doing well for three days. One kidney was found riddled with abscesses, the other was contracted. The second death also occurred at the same hospital, but from peritonitis caused probably by hospitalism. The third and fourth fatal cases were in advanced stages of septicemia when operated on. Each one had high temperature, frequent pulse and night sweats from suppurating cyst. In addition, one was bed-ridden and had bed-sores. The other had greatly swollen legs, although the tumor was a small one. In each the adhesions were universal and very formidable. The former died from shock fifteen minutes after the operation. The latter lived one week. Her's was a dermoid cyst, which in his experience was liable to have extensive and firm attachments, making removal often difficult and dangerous. Dermoid cysts also very vulnerable, taking on inflammation on the slightest provocation. In this instance a physician had removed some of the fluid with a hypodermic needle. He (Dr. G.) had had two cases of small cyst in Douglas' sac in which violent inflammation followed the use of the aspirator. The lives of his patients were, for several days, in danger, but fortunately they recovered with obliteration of the sac. This should render one cautious about touching a dermoid cyst, unless he is prepard to perform the radical operation. The fifth death occurred in a case forlorn from the outset. Five years ago Dr. Goodell had removed a very large colloid cyst of the left ovary from this woman. A year ago her health began to fail coincidently with the appearance of another abdominal tumor, and she was rapidly pulled down. On opening the abdomen Dr. Goodell found that the cyst had burst some time before, and that a colloid material had escaped in large quantities into the peritoneal cavity. The degeneration was plainly malignant, as the womb, broad ligament, bladder and the parietal peritoneum were studded with papillomatous masses.

Dr. Goodell did not see her again but her physician, Dr. Bauman, of Telford, wrote that the wound healed perfectly. No abnormal symptoms set in, yet the woman grew weaker and weaker, dying from exhaustion on the sixteenth day after the operation. Dr. Goodell stated that this was the only case in which he had twice performed ovariotomy in the same patient; but that he had at present a lady under treatment from whom, four years ago, he had removed the left ovary for cystic degeneration and in whom the right ovary is now enlarging and will need extirpation before long. The liability of the sound ovary becoming diseased amounted in his cases to 1.5 per cent., and this strengthened him in the conviction that in women approaching the climacteric both ovaries should, as a rule with but few exceptions, be removed. That this case made his third one of colloid degeneration in which the sac had burst some time before the operation. In each the disease was evidently malignant. One survived the operation and went home, but died a few weeks later from a reaccumulation of colloid in the abdominal cavity, and a sprouting out of a crop of papillomata from the cicatrix in the abdominal wall. In the second one, both ovaries were removed and from great emaciation and weakness the woman became plump and strong. She did well for two years when a tumor made its appearance in the left broad ligament. A year later, she died after much suffering. From this experience he would look upon colloid yet with suspicion and would give a guarded prognosis in respect to ultimate recovery.

With regard to the causation of ovarian cysts he believed more and more that single life, sterility and unfruitfulness, whether natural or enforced, were important factors. Thus out of his twenty-two cases, nine were unmarried, and one was a widow. Again, of the married, one was sterile, one had borne but one child, and three had had only two children.

During the past year he had also performed eight oöphorectomies. Three of these operations were demanded for excessive menorrhagia and dysmenorrhœa from multiple fibroids, and two of them died, the difficulties of the operation being great. The other oöphorectomies were performed for pernicious menstruation, ovaralgia and threatened miscarriage and were successful. In no case did menstruation return, although in one there was a slight show of blood.

Of other laparotomies he had performed two, one of them an exploratomy incision in a woman greatly rednced by pain and obstruction of the bowels. Cancer of the pelvic organs was discovered. She died very suddenly from supposed embolism. The other laparotomy was a successful hysterectomy. The tumor weighed thirteen and a half pounds and consisted of the womb with many large fibroid growths. The adhesions to the abdominal walls, bowels and omentum presented many difficulties and needed many ligatures. The stump, which was fully four inches in diameter, was encircled by Köberlé's wire clamp, and treated outside of the peritoneal cavity. The patient recovered slowly and without a bad symptom.

The PRESIDENT presented a

GANGRENOUS FIBROID TUMOR OF THE UTERUS,

and made the following report of the case: Mrs. J., a patient of Dr. Ira D. Canfield, of Renova, Pa., 52 years of age, married; has had one child, 18 years of age; she has not been pregnant since. Her abdomen had been rather prominent for years, and about five years ago she discovered that it was becoming quite firm and hard over the lower protuberant portion. About the same time her menses began to appear more frequently than usual and to continue longer, until during the last year she flooded continuously three weeks out of every four. She thought she sometimes lost a quart of blood in twenty-four hours. There was great tenderness over the abdomen, so that the weight of the clothing was intolerable, and she had a constant feeling of painful distension, a sensation of bursting sometimes. These symptoms increased in severity, and in the latter part of January, 1885, labor-like pains supervened. Paroxysms of uterine tenesmus occurred several times a day, resulting finally in a discharge of serous fluid and gas, which must have been considerable in quantity, for the next morning there was marked subsidence of the previously distended abdomen. However, the large, dense, round and evidently uterine tumor still remained, tolerating now comparatively rough manipulation, the tenderness having almost entirely disappeared. The quasi labor pains increased in frequency and strength, and shreddy, putrid masses were occasionally expelled from the vagina. The patient began to show evidences of acute septicæmia. Dr. R. Armstrong, of Lockhaven, was now called in consultation, when it was determined that nature was endeavoring to cast off a decomposing uterine fibroid, and an effort was made to assist. Symptoms of blood poisoning became alarming.

On February 15 I was hurriedly summoned, and with the patient anæsthetized we found the following condition: Abdomen distended and tympanitic. A globular and symmetrical mass outlined within the lower portion of the abdomen, extending two inches above the umbilicus, about the size and consistence of the pregnant uterus at the seventh month of gestation. Hanging from the vaginal orifice was an elongated mass of toneless decomposing tissue, which resembled the appearance which might be presented by a great mass of amniotic membrane which had been allowed to remain in the parturient canal for several days after labor. It had a purplish ashy color, and was as thick as my forearm. The odor emitted was sickening. Passing my hand beside this mass, for I could not easily separate it, I found the os uteri so dilated that the vaginal and cervical canals were almost of the same calibre, and the rim of the os could scarcely be defined. Advancing my hand within the cavity of the uterus, it passed among an immense quantity of semi-friable, soft and shreddy tissue, and discovered several large tumors of firm consistence imbedded in, and apparently one with, the uterine wall. Indeed, it was difficult to define the uterine wall, so irregular and thick was it at some points and so thin at others. The tissues at the attenuated portions of the uterine wall proper appeared so weak that I feared the manipulations necessary to enucleate the tumor would make rupture of the uterus imminent. But their immediate removal was imperative, and fortunately their attachments were softened by the process of degeneration which had caused the grave symptoms. I therefore introduced Thomas's spoon saw, and with that and my fingers I separated and removed section after section until there was nothing left of the uterus but the merest shell. The aggregated quantity removed, a portion of which I present this evening, almost half filled a wooden bucket. The uterus did not contract well after the operation, and very free hæmorrhage occurred, but it was controlled, and the uterus made to contract by large and repeated injections of pure vinegar. The after-treatment was carefully and judiciously conducted by Dr. Canfield, and consisted of injections into the uterine cavity of vinegar twice daily until all fetid discharges had ceased. The improvement in the temperature and pulse of the patient was remarkable, and within a few days she expressed herself as feeling better than she had for years. She is now sitting up, apparently restored to health.

DR. R. P. HARRIS inquired the cause of the gangrenous change in the structure. Was it confined to the new tissue?

DR. GOODELL thought that the process of auto-enucleation was the cause of the degeneration of the tumor. The latter is a low grade of formation and the contractions of the uterus and the constriction caused by the cervix-uteri around the already extended portion interfered with the circulation in the tumor, and caused its death. In one case he removed a tumor in which this process had just commenced; the removal of the tumor was followed by a gush of near half a pint of broken-down blood which was very offensive in odor. A sharp attack of erysipelas followed.

DR. BAER could give no other reason than that advanced by Dr. Goodell. The tumor was of slow growth; no ergot was given, but labor-like pains supervened, and may have cut off the circulation. The degeneration was apparently confined to the new growth.

The PRESIDENT presented the specimen, and read the following report of a rapidly growing

PAPILLOMATOUS OVARIAN CYST.

Mrs. G., aged 41, widow for eight years, has had eight children, the youngest being nine years. She always enjoyed robust health until September, 1884, three months before I first saw her. At that time a slight metrorrhagia began without pain or other disturbance. Previous to that time her catamenial periods have been regular. In October she noticed that the lower portion of her abdomen was slightly enlarged a little to the left of the median line. She thought nothing of it then, but thought that she was growing fat. The hypogastrium, however, continued to distend, and she began to lose flesh. Her physician, Dr. A. R. Blair, of York, Pa., brought her to see me on January 3, 1885. Her abdomen was then as large as the sixth month of gestation, symetrically developed, perfectly smooth, dull on percussion over

the distended portion, but resonant in flanks and epigastrium, and there was marked fluctuation. Dark bloody discharge from uterus, not fetid. It was thought she was pregnant and that the metrorrhagia was due to threatened miscarriage. But she was losing flesh, and there were no rational or physical signs of pregnancy except abdominal enlargement. The uterus was slightly prolapsed and retroverted, rather softer than natural, as patulous, cervix granular. Sound two and a half inches. Uterus not easily moved because of a mass pressing upon it from above. I diagnosticated a rapidly-growing ovarian cyst and advised immediate operation; but she was not ready. I saw her again on February 7. The tumor had increased to double the size it was at first examination. It was still symetrical and occupied the same relation to the uterus. She was losing flesh and strength. She now complained of pain all over anterior surface of abdomen, and her pulse and temperature were slightly elevated. She at no time suffered from pain in the tnmor.

On February 18, she entered my private hospital. Has increased greatly in size during the intervening ten days. Circumference at umbilicus forty-six inches; veins in abdominal wall distended. Tumor still symetrical and markably fluctuating. Metrorrhagia has continued daily since its first appearance in September. Suffers from dyspnœa. Pain over surface as before, and abdominal wall seems to be one with the tumor. I suspected, from this circumstance, adhesion of tumor to peritoneum. Urine normal.

Operation. — Feb. 20, 11 A.M. Assisted by Drs. D. J. M. Miller and J. C. Gabell, in the presence of Drs. A. R. Blair, J. W. Kerr, and F. B. Hazel. Incision, three inches; tumor almost universally adherent to anterior wall of abdomen and omentum and very vascular. I passed my hand and separated adhesions, and then tapped the cyst; the fluid had the color and consistence of healthy pus, and was more than an ordinary wooden pailful in quantity. Solid portion of tumor larger than the fœtal head at term was delivered through the small incision. The tumor proved to be of the left ovary, and had a very short and vascular pedicle which held it in close contact with the uterus. Ligated and amputated omentum, transfixed and ligated the pedicle with fine Chinese silk, cut and dropped it. The right ovary being perfectly healthy, was not removed. The uterus was soft and congested. Peritoneum purple from congestion, but there had been no ascitic fluid, and the peritoneal cavity was found almost free from liquid. Probably ten minutes were spent looking for bleeding vessels and finishing the "toilette of the peritoneum." Abdominal wound then closed with eight silk sutures.

The patient recovered from the anæsthetic without any evidence of shock; pulse 98, temperature normal; and she continued to do well until the second day in the evening of which her temperature reached 100°, its highest point, pulse 108, and strong. She complained of being tired, and looked worn. She had not passed flatus from the anus, but there were occasional eructations of foul gas. There was no tympany and no pain, but at about 11 P.M. she vomited, or rather regurgitated, about a pint of very fetid yellowish liquid of a decidedly fecal odor. The large quantity (she had not taken a teaspoonful of anything since the operation) and the odor, together with the fact that she had not passed flatus from the anus, caused me to suspect intestinal obstruction. Her temperature fell soon after this to 96° and her pulse rose to 130, and became very weak. There was no pallor of countenance or distension of abdomen or Douglas's cul-de-sac, or I should have thought this depression, bordering on collapse, was due to hæmorrhage. Neither were there any other symptoms of intestinal obstruction than the apparent fœcal vomiting and the non-escape of flatus from the rectum. Under the influence of active stimulants, by the rectum and hypodermically, she slowly rallied, but the temperature did not reach the normal point until the fifth day after the operation, when flatus began to escape from the rectum. Her recovery was rapid after this. The sutures were removed on the eighth day. Union complete and solid, she sat up on the thirteenth day. There has not been any bloody discharge from the uterus since the operation.

The tissues of the cyst wall are very friable and the internal surface is studded with an exuberant papillary growth, presenting an appearance not unlike cauliflower excrescence. The very rapid growth of this tumor to the greath size which it attained in five months, the constant metrorrhagia and the character of the tumor, places this case quite out of the usual course of development of ovarian cysts and make it worthy of record. These are characteristics of malignant disease. Is this a malignant tumor? I think not, in the sense of that it will necessarily return, now that it has been removed before the cyst wall had been broken down and discharged its contents into the peritoneal cavity. This is the course of papillomatous ovarian cysts. But even when this has occurred and the peritoneum become involved, the disease may not return after removal.

Some years ago I assisted Dr. Goodell in the removal of a papillary growth of the ovary in which the cyst had ruptured and discharged its contents into the peritoneal cavity. The peritoneum was greathly involved, being thickly studded at various points with hard papillary nodules. The patient recovered and the disease has not returned. Dr. Emmet records a like experience. He says: "I have never regarded the condition as malignant in character or in any respect more than a benign growth, accidental to ovarian tumors and accompanied by an ascitic accumulation [ascites complicates a later stage of the disease than my case had reached]. I have, however, sometimes observed in this supposed malignant disease that patients bore the shock of the operation badly and died from apparently trival causes." (*Prin. and Prac. Gynic., 3d ed, p. 683*). It is probable that ovarian cysts of very rapid development often have this papillary character. One of the specimens which I presented to this society at its last meeting was of this description, though less marked, and it had attained a size of thirty pounds in nine months. It is also probable that the constitution is more profoundly affected by these

growths than by the ordinary slow-growing ovarian cysts. For these reasons operation should never be deferred in such tumors.

Dr. Harris inquired whether any microscopic examination of the tumor had been made. He always suspected malignancy in rapid growths and in papillomatous tumors the decision can not be made from appearances as of two such having the same apparent characters, one may prove to be malignent and the other benign.

Dr. Goodell remarked that the question of malignancy in ovarian tumors was a most interesting one. As regards papillomatous cysts, Doran had divided them into two classes: one springing from the hilus of the ovary, and not necessarily malignant, while papillary growths in cysts of the broad ligament usually indicate malignancy. Some years ago he removed a collapsed papillomatous ovarian cyst upon which the late Dr. Hodge had refused to operate in consequence of supposed malignancy. It was complicated by ascites, and the peritoneal cavity had become infected with secondary growths, yet the woman got well and has probably remained well. On the other hand, benign looking growths were sometimes malignant; for instance, he removed a large tumor having many adhesions, twenty-four ligatures were left in the abdominal cavity. It was wholly benign in appearance, and the patient got up and about; but soon she became oppressed by rapid breathing. Effusion into the right pleura was discovered, together with malignant growths affecting that cavity and scattered throughout the abdominal cavity. The tumor was evidently malignant, but it did not look so. In another case of apparently benign cyst, in which the clamp was used, menstruation occurred from the cicatrix, and later papilloma of the stump and abdomen sprouted out from the cicatrix and the patient died. He said that all his cases of colloid tumors, three in number, have become malignant afterward.

In one case, five years after the first operation the second ovary became diseased, the sac burst and the whole contents of the peritoneal cavity became infected. In another, two years after the removal of both ovaries the disease returned in the broad ligament, probably from the stump of the ovary. In another case, the cicatrix burst open a few weeks after the operation and a large papillomatous growth spurted out, the lady dying soon after. Tait considered that among the causes of malignancy are tapping and delay in operating, the age of the cyst tending to malignancy. Dr. Goodell doubts if the microscope can distinguish between benign and malignant papillomata. Virchow states that although benign at the beginning, they may become malignant in the later stages.

Indian Doctors in Liverpool.—An "Indian doctor" in Liverpool recently brought an action for libel against Mr. Pennington, a surgeon, to recover damages for libel. The suit was decided against the plaintiff.

DOMESTIC CORRESPONDENCE.

POISONING BY TURPETH MINERAL.

Editor of the Journal of the American Medical Association:

Dear Sir,—Having noted the facts that several cases of poisoning by turpeth mineral (mercuric subsulphate) have been reported in the journals during the past year; that all of the cases, if I remember rightly, have occurred in children; and that the reporters have declared themselves at a loss to explain the rationale of this effect of what is generally considered an insoluble salt, it has occurred to me that an explanation may be found in the effect produced upon turpeth mineral by hydrochloric acid—assuming, of course, that the acid furnished by the stomach is hydrochloric acid.

In the cases which have been reported, the amount of the turpeth mineral given has been, as a rule, as much as grs. iij, and more.

Mercuric subsulphate, when subjected to the action of hydrochloric acid, is resolved into corrosive sublimate and mercuric sulphate, two atoms of water being set free. This being true, how much hydrochloric acid will be required to bring about the reaction; and how much corrosive sublimate will be found by this reaction from, say, gr. iij of turpeth mineral?

(*a*) $4HCl + Hg(HgO)_2SO_4 = 2HgCl_2 + {}_2H_2O + HgSO_4$.

(*b*) grs. grs. grs. grs.
872.7 : 3 :: 145.6 : 5+

(*c*) If $\left.\begin{matrix} HCl \\ 145.6 \end{matrix}\right\} + \left\{\begin{matrix} Hg(HgO)_2SO_4 \\ 727.1 \end{matrix}\right\} = \left\{\begin{matrix} {}_2HgCl_2 \\ 541 \end{matrix}\right.$

then .5 + 3 = 2.16+

for 872.7 : 3.5 : : 541 : 2.16+.

Hence it will take a little over gr.ss of hydrochloric acid to convert gr. iij of mercuric subsulphate into 2.16 grains of corrosive sublimate; quite sufficient to poison a child. It may be objected to this, that we are not certain that this reaction really takes place, as we are not positively sure that there is any free hydrochloric acid in the stomach of the child; and that it has not been shown that the cases were those of corrosive sublimate poisoning. The most conclusive answer is that the cases resembled those of corrosive sublimate poisoning very closely. Furthermore, it is seen that only a very small quantity of hydrochloric acid is necessary to cause this reaction; and that even if the acid furnished by the gastric glands is not hydrochloric acid, physiology teaches that it very closely resembles it. In fact, Albertoni proved almost conclusively, in 1873, that this acid is hydrochloric.

The above is merely offered as a possible explanation of the fact that so insoluble a body as turpeth mineral sometimes causes death, with symptoms closely resembling those of poisoning by corrosive sublimate.

Very respectfully,

Wm. G. Eggleston, M.D.

MULTIPLE AMPUTATIONS.

Journal of the American Medical Association:

Your numerous readers will doubtless be pleased to receive the closing record of a case of more than ordinary interest. In the last edition of "Gross'

Surgery," under the caption of "Synchronous Amputations," a notice occurs of the remarkable case of David Hamer, of Schuylkill, Pa. The subject of this notice met with an accident in the year 1847. Immediately after the receipt of the injury, he was visited by several of the most prominent physicians in this section of the country, who at once decided upon the hopelessness of the case, and abandoned all interference.

The late Dr. J. G. Koehler, then a young man in the profession, assumed the responsibility of operating upon the case. The injured man was then seventeen years of age. The amputations were performed *before reaction was established, without* any anæsthesia (and *without* any antiseptic). The legs were removed near the knee-joint, and the left arm near the shoulder-joint. The recovery was complete in two weeks. The patient grew to be a strong, able-bodied man.

He was engaged in keeping a public house for many years, and enjoyed remarkable health. He died, I think, on the 3d of March, and was buried March 7 at Schuylkill Haven, the home of his birth. He lived nearly *thirty-eigh tyears* after the operation.

D. W. BLAND, M.D.

Pottsville, Pa., March 10, 1885.

BOOK REVIEWS.

DES AFFECTIONS CEREBRALES CONSECUTIVES AUX LESIONS NON-TRAUMATIQUES DU ROCHER ET DE L'APPAREIL AUDATIF. Par ALBERT ROBIN, Chef des Trauvaux Chimiques au Laboratoire de la Charité, Médecin des Hopitaux, Chevalier de Legion d'Honeur, Lauréat de l'Institut, etc. 8vo, pp. 160. Paris, 1883. J. B. Baillière et Fils.

CEREBRAL AFFECTIONS FOLLOWING NON-TRAUMATIC LESIONS OF THE TEMPORAL BONE AND THE AUDITORY APPARATUS. By ALBERT ROBIN. Paris, 1883.

Of the many justly distinguished writers of the French school of medicine, few have become more prominent within the past ten years than Albert Robin. During that time he has published no less than eighteen monographs, many of them valuable contributions to urological literature ; the three last, however, being the result of laborious investigations in cerebral pathology, to which special department his work has been confined almost entirely for about four years.

The more recent writers on cerebral affections, as connected with non-traumati clesions of the temporal bone and auditory apparatus, have made a distinction between inflammatory and reflex, sympathetic or functional complications, including in the first group such affections as meningitis, thrombosis and phlebitis of the venous sinuses and dura mater, meningo-encephalitis, and cerebral or encephalic abscess ; in the second, aural vertigo, convulsion and epileptiform attacks, in a word, psychical troubles. Robin remarks that these two orders of complications have been described separately, and as though there was no relation between them ; that they have, even clinically, been described as totally distinct, and it is to this task, of showing wherein they are related, that he now addresses himself in the work under consideration. The researches of other observers, among others those of the lamented Lasègue, have opened an entirely new field in the pathogenesis of cerebral disorders, which has been still further enlarged by the contributions of Fournier to the subject of cerebral affections following naso-cranial osteitis.

Having sought a solid base of operations in anatomy and physiology, and having collected two hundred cases from older and more recent writers, Robin now proceeds to discuss his subject from the following points of view : (1) *anatomico-pathological;* (2) *physiologico-pathological;* (3) *clinical;* and (4) an *etiological* point of view. With regard to the *physiologico-pathological* point of view, he asserts, first, that no single theory can account for the mechanism by which lesions of the temporal bone and auditory apparatus cause cerebral affections ; and, second, that sympathetic or functional lesions do not belong to this or that auditory affection, but require for their production a certain number of conditions which shall agree as well in affections of the ear as in those capable of affecting the brain. Respecting the *clinical* point of view, he has still more to offer by way of explanation, viz. : The cerebral lesions of auricular or petrous origin cannot be divided and described separately. At the most, one may choose, in the multiplicity of appearances under which they are manifested, symptomatic types, of which some appear to respond more particularly to one lesion or one group of anatomical lesions. Clinically we cannot distinguish absolutely between cerebral phenomena of an inflammatory condition and those of functional origin. If the first correspond to the grave morbid states which hasten and terminate the disease, the others should be more often considered as the first indications of the effects of auditory or petrous lesions on the encephalon. The diagnostic and prognostic value of aural vertigo, psychical troubles, etc., becomes considerable when these accidents supervene in the course of an auditory lesion of extensive character. They then assume the importance of premonitory or cautionary accidents. At this time they present, in their course, their modes of association in the circumstances which precede, accompany or follow them, an *ensemble* of peculiarities which sometimes enables us to distinguish them from troubles purely reflex and due to indifferent or slight aural affections. So far as they are essentially of a reflex order, just so far do they denote the first effects of material affection of the aural lesion on the encephalon. The epoch at which they appear may precede by a very long time the invasion of the grave complications which determine death.

In Chapter I, the author considers the relations, anatomical and physiological, existing between the temporal bone and auricular cavities and the brain. From a summary of the embryological relations of the auditory apparatus, which we cannot here discuss, he concludes that that apparatus is an absolutely peripheric organ, connected with the encephalon by a nerve, and with no other than a nervous connec-

tion. He also thinks it worthy of remark that the two superior faces of the petrous portion of the temporal bone have a *meningeal*, not a true periosteal, covering, while that of the external or tympanic face is *mucous*, the frequent seat of various inflammatory conditions; and also that the thin plate of bone separating these two abnormal periostea is very thin, and frequently absent.

In his consideration of the not infrequent anomalous appearances found in the cavity of the tympanum, he remarks that these weak points give rise, not without foundation, to certain *dangerous zones* in the walls of the middle ear. The osseous, so thin and weak, are covered by mucous membrane constructed on the type of that of the air-passages, and capable, as this last, of being the seat of several inflammatory conditions; that is to say, the chances of periostitis are much greater here than at almost any other point. Nor are the circulatory conditions of the cavity of the tympanum less favorable for the propagation of lesions to the cerebral veins. The veins of the middle ear empty partly into the middle meningeal and partly into the venous plexus, passing through the carotid canal, which is the prolongation of the cavernous sinus. Tröltsch says, moreover, that the veins of the tympanic cavity communicate with the superior petrosal sinus. If to this be added the fact that the venous blood of the labyrinth is taken up by the vestibular veins, themselves tributaries of the superior petrosal sinus, we at once see that the petrous portion of the temporal is not only in close relation and contact with six of the principal sinuses of the dura mater, but it also throws into these sinuses a great part of its venous blood; and from a circulatory standpoint the communications of the internal and middle ear, and the petrous portion of the temporal with the encephalic venous circulation, are largely open; a capital condition for the extension of phlebitis from an inflamed ear to the meninges and brain. It is important that the cerebellar origin of the auditory nerve be borne in mind, because, as Robin states, this fact will aid in the explanation of the singular relations existing between the phenomena following vestibular lesions and those succeeding cerebellar lesions.

From a physiological standpoint, the auditory apparatus exercises a series of peculiar influences of reflex order on the brain. Of these influences, the most interesting, says the author, are the actions of instinctive and rhythmic regulation of general muscular movements, under the influence of rhythmic and musical sounds. We see that he is carefully establishing that anatomical and physiological basis of which he has already spoken. But, he further remarks, it is especially in the pathological state that the influence of perverted acoustic impressions, on the encephalon generally and the cerebrum particularly, is felt with most intensity. He even goes so far as to say that every irritation of the internal ear, more or less intense and continued, determines cerebral troubles of a particular character; this fact, recognized clinically, has given rise to such expressions as *vertigo ab aure læso*, the type of which is found in the pathological state known as Menière's disease. These vertiginous phenomena may be classified under three principal heads: 1. Troubles of equilibration; 2. Vertiginous sensations; 3. Certain peculiar abnormal movements, which are classed as phenomena of Flourens. He adds here, that in man, who alone can give an account of his sensations, the troubles of these three orders are accompanied by peculiar auditory sensations which form the fourth term of the syndrome now under consideration. As the author specially considers these in a subsequent chapter, we pass on to notice Chapter I, in which he discusses the lesions of the auditory apparatus and petrous bone, which may cause cerebral affections.

First, as regards the auditory apparatus itself, he remarks that we may say, with Prof. Duplay, that there is no affection of the auditory apparatus which cannot cause cerebral troubles. From the common collection of cerumen to the most profound alterations of the ear, of the petrous bone or mastoid process, there is no diseased condition which may not induce some cerebral complication. In the great majority of cases, he says, otitis med. chron. supp., ordinarily called chronic otorrhœa, is the dominant cause of inflammatory affections of the encephalon; and, according to Wieden, cerebral abscess occurs in 14 per cent. of the cases of chronic otorrhœa. Acute suppurative disease of the middle ear is also, though less frequently, a cause of cerebral troubles, caries of the bones, which is much more frequent in chronic aural affections, being a large factor in their causation. When, however, they do occur in the acute course of the disease, the termination by cerebral disease seems, in many cases, to be very rapid. He cites a case, from Urbantschitsch, of a man, æt. 73, with no history of cerebral or aural trouble, who died from cerebral complications, 56 hours after the initiation of acute median disease, due to exposure to cold. Knapp states, 1879, that he has had only one death from cerebral complications in 182 cases of acute median otitis, but the author thinks that, from a careful review of the literature of the subject, the frequence of cerebral troubles in this disease is much greater than specialists will acknowledge.

The reviewer, after a very limited search through the literature of 1881–2, has found the following cases:

1. Abscess of the brain in connection with disease of the ear. Ryerson. *Canada Lancet*, November, 1881. This case is remarkable as being an example of cerebral abscess following acute otitis media.

2. Cerebellar abscess from otitis med. chron. *Philadelphia Medical Times*, August 27, 1881.

3. Cerebellar abscess from otitis med. chron. *Australian Medical Journal*, April 15, 1881.

4. Cerebral abscess from otitis med. pur. chron. *Edinburgh Medical Journal*, June, 1881.

5. Cerebellar abscess after otitis med. chron. *American Journal Otology*, October, 1882.

6. Cerebellar abscess from otitis media acuta, supervening on otitis med. pur. chron. *Archives of Otol.*, Vol. xi, No. 1, 1882.

7. Cerebral abscess following chron. sup. otitis. *Archives of Otology*, Vol. xi, No. 1, 1882.

8. Acute middle ear inflammation with death from

extension of disease to the brain. *American Journal Otology*, October, 1882.

9. Acute inflammation of the middle ear—four deaths. *American Journal Otology*, April, 1882.

It will be seen from the above references that there were seven deaths resulting from acute diseases of the middle ear.

There is still another variety of median otitis which frequently determines cerebral affections (not to speak of periosteal otitis, of which there is, according to Robin, but one single authentic case which has been followed by a cerebral accident, that recorded by Zaufal, *Archiv. f. Ohrenh.* xvii. p. 157, 1881):

This is the affection described by Müller as cholesteatoma, sebaceous or molluscous tumors by Toynbee, and to which Urbantschitsch and Wendt have given the name *desquamative otitis*. The cholesteatomata appear to be the more or less degenerated epithelial residue of a desquamative otitis, though authorities differ as to their nature. Wendt admits their epithelial nature and inflammatory origin. Bezold believes that they are epithelial, and caused by a prior inflammation, but ulteriorly constitute an independent affection. Lucae thinks that they are tumors *suorum generis;* while Gruber regards them as neoplasms of a peculiar kind, springing from an ulcerated mucous membrane.

In conclusion, it may be said that while M. Robin has not written a good text-book, nor a great book, he has given us a most excellent monograph, and a valuable addition to otological and general medical literature, which is marked by a terseness too seldom found in the writings of our French *confrères*.

W. G. E.

MISCELLANEOUS.

AMERICAN MEDICAL ASSOCIATION.—All who desire to join in the excursion to New Orleans, which will leave Philadelphia about April 22, with sleeper and hotel cars, should at once send their names to this office stating how many tickets they will require.

WM. B. ATKINSON, M.D., Perm't Sec'y,
1400 Pine street, Philadelphia.

DEATH OF PROFESSOR ELLERSLIE WALLACE.—The Eastern journals announce the death of Dr. Ellerslie Wallace, who, until two years ago, was Professor of Obstetrics in the Jefferson Medical College. He was born in Philadelphia, in 1819, and was of Scotch extraction, claiming to be a direct descendant of Robert Bruce. He graduated from the Jefferson Medical College in 1843, having studied medicine under his brother, who was demonstrator of anatomy in the college.

CHOLERA IN CHICAGO.—One of the leading daily papers says, on this subject: The State Board of Health has sent a circular letter to mayors of cities urging that immediate steps be taken to guard against cholera. The board says that "whenever Asiatic cholera has prevailed as an epidemic in Europe it has eventually reached this country, causing great loss of life and severe injury to commerce and all kinds of productive industry." In view of this the board declares that "states, municipalities, communities and individuals should hasten to put themselves and their belongings in the best attainable condition to limit the spread of the disease and to prevent those diseases that attend a cholera epidemic." For more than a year the *Daily News* has been insisting on a thorough cleaning of the city, that the pestilence might not find here a congenial resting-place. But what has been done? Practically nothing. There is hardly a street in the city that is not a mass of filth from curbstone to curbstone, nor an alley that is not far worse. In New York and other large cities a systematic war has been carried on against everything that would contribute to the spread of Asiatic cholera. In that city the board of health has directed a house-to-house inspection, to see that neither the ignorance nor the perversity of the citizens shall endanger the health of New York. Chicago, in its sanitary as well as its moral condition, is in a deplorable predicament.

PROFESSOR OGSTON, whose services, as was stated in our last issue, were not accepted by the British War Office, has been permitted to go to the scene of war operations. His reasons for going are, that as he has to teach students in Edinburgh, many of whom will enter the Army Medical Service, he wishes to make himself practically acquainted with military surgery.

DR. POPPER, the well-known worker in subject of hygiene, has recently died at his home in Prague.

DR. NATHANIEL FORD, of Brooklyn, died in that city on March 9, in the seventy-third year of his age. He graduated from Bowdoin Medical College in 1836.

RAW MEAT AND TRICHINOSIS IN BERLIN.—A very violent outbreak of trichinosis has recently occurred in the house of a dentist in Berlin. Eight persons were attacked, and one died. The disease was caused by the use of raw ham.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM MARCH 7, 1885, TO MARCH 13, 1885.

Army Medical Board to meet in New York city, April 6, 1885. detail for board, Lieutenant-Colonel Jos. R. Brown, Surgeon, Major Anthony Heger, Surgeon, Major Jno. H. Janeway, Surgeon.

Surgeon Heger to be relieved from duty in Dept. East, and Surgeon Janeway to perform duties on the board in addition to his present duties. (S. O. 56, A. G. O., March 11, 1885.)

Brown, H. E., Major and Surgeon, granted leave of absence for one month, with permission to apply for two months' extension. (S. O. 48, Dept. East, March 6, 1885.)

Taylor, Blair D., Captain and Assistant Surgeon, leave of absence extended two months. (S. O. 54, A. G. O., March 9, 1885.)

Porter, J. G., Captain and Assistant Surgeon, sick leave of absence further extended fourteen days on account of sickness. (S. O. 51, A. G. O., March 5, 1885.)